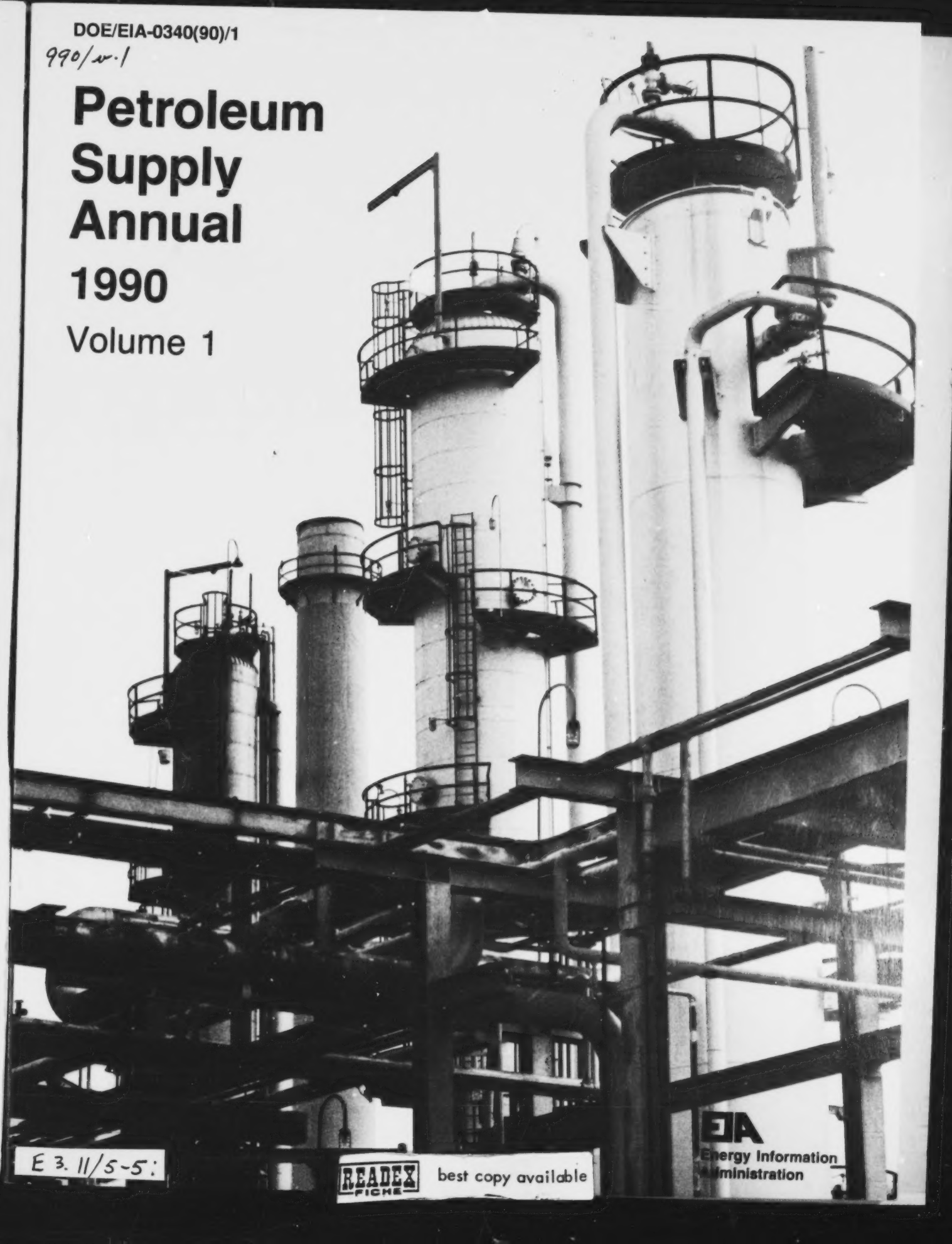


Petroleum Supply Annual 1990

Volume 1



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Cover: Desulfurizers at the Star Enterprise, Delaware City Refinery (Courtesy of the National Petroleum Council)

Petroleum Supply Annual 1990

Volume 1

Energy Information Administration

Office of Oil and Gas

U.S. Department of Energy

Washington, DC 20585

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Preface

The *Petroleum Supply Annual* (PSA) contains information on the supply and disposition of crude oil and petroleum products. The publication reflects data that were collected from the petroleum industry during 1990 through annual and monthly surveys. The PSA is divided into two volumes. This first volume contains three sections, Summary Statistics, Detailed Statistics, and Refinery Capacity, each with final annual data. The second volume contains final statistics for each month of 1990, and replaces data previously published in the *Petroleum Supply Monthly* (PSM). The tables in Volumes 1 and 2 are similarly numbered to facilitate comparison between them. Below is a description of each section in Volume 1 of the PSA.

Summary Statistics

This section contains a summary of the data presented each month in the PSM and in Volume 2 of the PSA. It includes a description of the major events in the petroleum industry during 1990 including trends in supply, consumption, and production. Graphs and tables are provided which show 18 years of data depicting the balance between supply, disposition and ending stocks for various commodities including crude oil, motor gasoline, distillate fuel oil, residual fuel oil, jet fuel, and liquefied petroleum gases.

Detailed Statistics

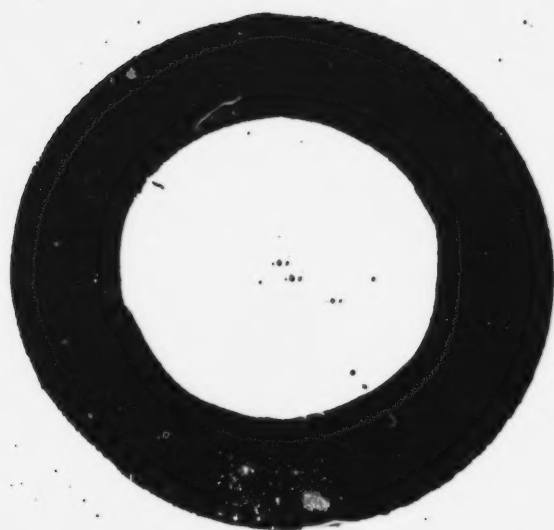
The tables contained in this section provide 1990 detailed statistics on supply and disposition, refinery operations, imports and exports, stocks, and transportation of crude oil and petroleum products.

Refinery Capacity

This section describes major activities within the refinery industry during 1990. The tables are compiled from the Form EIA-820, "Annual Refinery Report." Of particular note are listings of facilities and associated capacities in each State. In addition, summaries of corporate refinery capacities, refinery storage facilities in selected States, and refinery shutdowns, sales and mergers during 1990 are provided.

Appendices

Explanatory Notes present information describing data collection, sources, estimation methodology, data quality control procedures, modifications to reporting requirements and interpretation of tables. Appendix C is provided to inform the user of updated monthly and annual crude oil production statistics received after the publication of the 1989 PSA. Industry terminology and product definitions are listed alphabetically in the Glossary.



Contents

	Page
U.S. Petroleum Supply (Feature).....	ix
Tables	
Summary Statistics	
S1. Crude Oil and Petroleum Products Overview, 1973-Present	2
S2. Crude Oil Supply and Disposition, 1973-Present	6
S3. Crude Oil and Petroleum Product Imports, 1973-Present	8
S4. Finished Motor Gasoline Supply and Disposition, 1973-Present	17
S5. Distillate Fuel Oil Supply and Disposition, 1973-Present	19
S6. Residual Fuel Oil Supply and Disposition, 1973-Present	21
S7. Jet Fuel Supply and Disposition, 1973-Present	23
S8. Liquefied Petroleum Gases Supply and Disposition, 1973-Present	25
S9. Other Petroleum Products Supply and Disposition, 1973-Present	26
Summary Statistics Table and Figure Sources	27
Summary Statistics Explanatory Notes	28
Detailed Statistics	
National Statistics	
1. U.S. Petroleum Balance	31
2. U.S. Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products	32
3. U.S. Daily Average Supply and Disposition of Crude Oil and Petroleum Products	33
Supply and Disposition of Crude Oil and Petroleum Products	
4. PAD District I	34
5. Daily Average PAD District I	35
6. PAD District II	36
7. Daily Average PAD District II	37
8. PAD District III	38
9. Daily Average PAD District III	39
10. PAD District IV	40
11. Daily Average PAD District IV	41
12. PAD District V	42
13. Daily Average PAD District V	43
Production of Crude Oil	
14. Production of Crude Oil by PAD District and State	44
Natural Gas Processing	
15. Natural Gas Plant Net Production and Stocks of Petroleum Products by PAD and Refining Districts	45
Refinery Operations	
16. Refinery Input of Crude Oil and Petroleum Products by PAD and Refining Districts	46
17. Refinery Net Production of Finished Petroleum Products by PAD and Refining Districts	48
18. Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts	50
19. Percent Refinery Yield of Petroleum Products by PAD and Refining Districts	52
Imports of Crude Oil and Petroleum Products	
PAD District	
20. Imports of Crude Oil and Petroleum Products	53
Country of Origin	
21. United States	54
22. PAD District I	56
23. PAD District II	58
24. PAD District III	60
25. PAD Districts IV and V	62
State of Entry	
26. Imports of Residual Fuel Oil by Sulfur Content	64

Exports of Crude Oil and Petroleum Products

27. Exports of Crude Oil and Petroleum Products by PAD District	65
28. Exports of Crude Oil and Petroleum Products by Destination	66

Net Imports

29. Net Imports of Crude Oil and Petroleum Products into the United States by Country	68
---	----

Stocks

30. Stocks of Crude Oil and Petroleum Products by PAD District	69
31. Refinery, Bulk Terminal, and Natural Gas Plant Stocks of Selected Petroleum Products by PAD District and State	72

Movements of Crude Oil and Petroleum Products

32. Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts	73
33. Movements of Crude Oil and Petroleum Products by Pipeline Between PAD Districts	74
34. Movements of Crude Oil and Petroleum Products by Tanker and Barge Between PAD Districts	75
35. Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts	76

U.S. Refining Industry (Feature)	77
--	----

Refinery Statistics

36. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 1991	90
37. Production Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 1991	92
38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991	94
39. Refiners' Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 1991	120
40. Operable Crude and Downstream Charge Capacity of Petroleum Refineries, January 1, 1981 to January 1, 1992	124
41. Operable Production Capacity of Petroleum Refineries, January 1, 1981 to January 1, 1992	125
42. Working Storage Capacity at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991	126
43. Shell Storage Capacity at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991	128
44. Refinery Receipts of Crude Oil by Method of Transportation by PAD District, 1990	130
45. Fuels Consumed at Refineries by PAD District, 1990	130
46. Reactivated and Shutdown Refineries During 1990	131
47. Refinery Sales During 1990	132

Illustrations

S1. Petroleum Overview, 1973-Present	4
S2. Petroleum Products Supplied, 1973-Present	4
S3. Crude Oil Supply and Disposition, 1973-Present	5
S4. Crude Oil Ending Stocks, 1973-Present	5
S5. Finished Motor Gasoline Supply and Disposition, 1973-Present	16
S6. Motor Gasoline Ending Stocks, 1973-Present	16
S7. Distillate Fuel Oil Supply and Disposition, 1973-Present	18
S8. Distillate Fuel Oil Ending Stocks, 1973-Present	18
S9. Residual Fuel Oil Supply and Disposition, 1973-Present	20
S10. Residual Fuel Oil Ending Stocks, 1973-Present	20
S11. Jet Fuel Supply and Disposition, 1973-Present	22
S12. Jet Fuel Ending Stocks, 1973-Present	22
S13. Liquefied Petroleum Gases Supply and Disposition, 1973-Present	24
S14. Liquefied Petroleum Gases Ending Stocks, 1973-Present	24

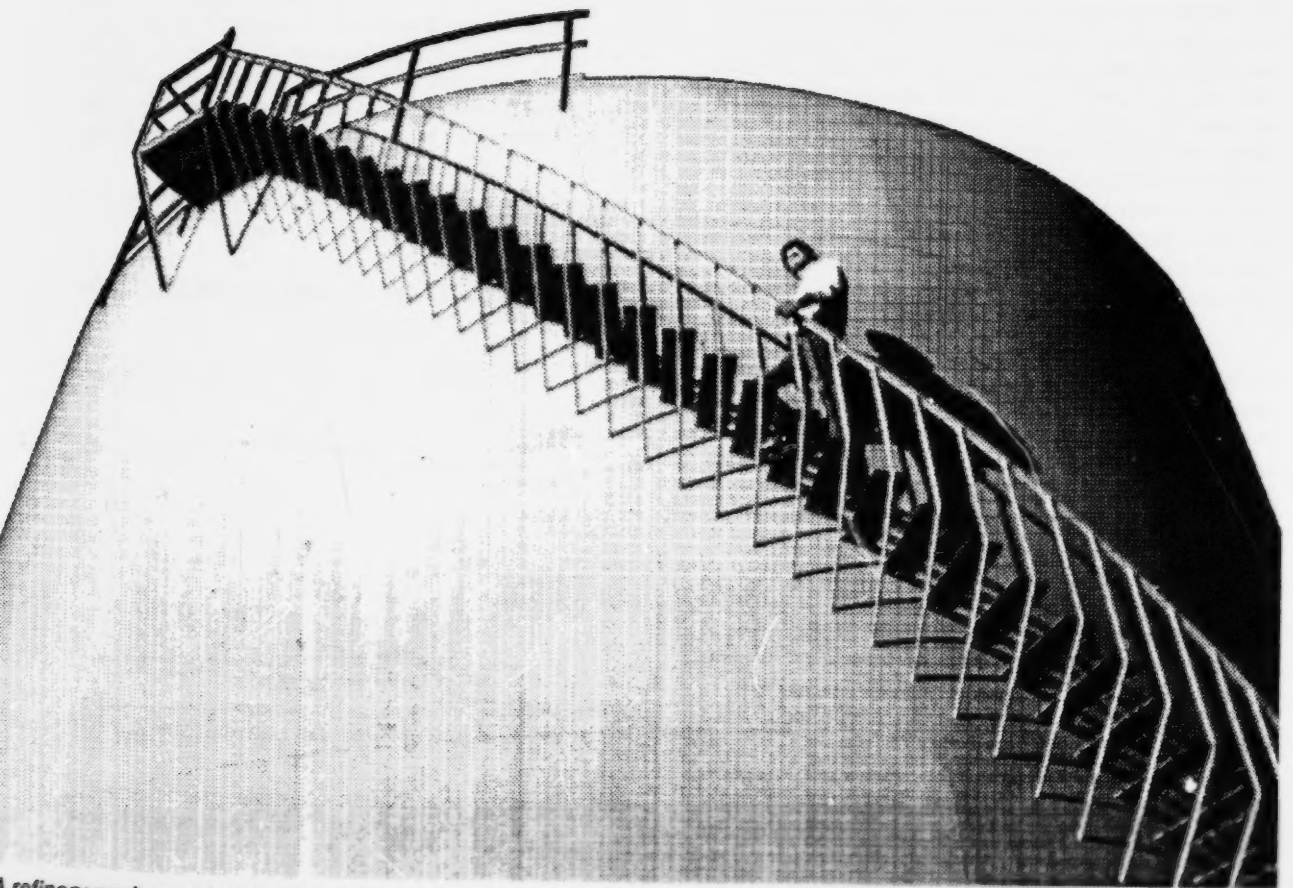
Appendices

A. District Descriptions and Maps	137
B. Detailed Statistics Explanatory Notes	137
C. Revised Crude Oil Production by PAD District and State, 1989	161

Glossary

Definitions of Petroleum Products and Other Terms	165
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**U.S.
Petroleum
Supply**



A refinery worker makes his way around a towering storage tank to check the tank level.



U.S. Petroleum Supply

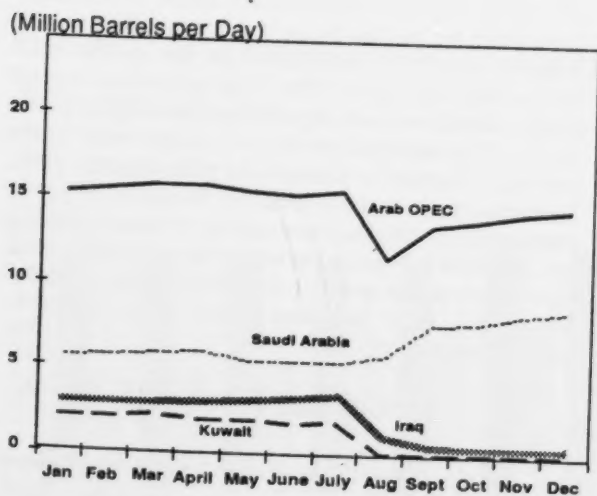
by Daniel C. Adkins and David E. Gatton

A slowing economy, above-normal temperatures during the winter months, and higher prices due to the crisis in the Persian Gulf combined to restrain petroleum demand (measured as product supplied in the *Petroleum Supply Annual*) to 17.0 million barrels per day during 1990, the lowest level since 1987. This level also marked the first year since 1983 that petroleum demand in the United States did not match or exceed the volume of the previous year.

The year began with U.S. petroleum supply recovering from the near record cold weather disruptions of December 1989, which had severely depleted stocks of heating fuels, especially distillate fuel oil and propane. The recovery was aided by the warmest January on record for the continental United States. Temperatures were nearly 16 percent higher during the first quarter 1990 than during the same quarter in 1989. With the slowing economy further reducing demand, total U.S. petroleum stocks began to recover during the first half of the year and reached an all time high by July 1990.

The international dimension of petroleum supply became evident in August 1990. Iraq's invasion of Kuwait and the resulting United Nations (UN) embargo led to a temporary loss of over 7 percent of the world's petroleum production (Figure FE1). While oil producing countries were able to expand production and make up the lost supplies by the end of the year, there was concern that Iraqi aggression would impact petroleum production in other parts of the Persian Gulf. The

Figure FE1. Arab OPEC Petroleum Production, 1990



Source: Energy Information Administration, *International Petroleum Statistics Report*, April 1991, Table 1.1.

loss of imports from Iraq and Kuwait, however, was further offset by a drop in demand due to higher prices, the U.S. recession, a mild winter, and releases from strategic petroleum stocks of several countries.

After the Iraqi invasion of Kuwait, the U.S. petroleum market went through several changes. Crude oil imports went from a high of 6.9 million barrels per day in July to 4.6 million barrels per day in December. This resulted in a decline in annual petroleum imports from 1989 levels. The increase in the price of oil slowed the monthly decline of U.S. oil production, but for the year, domestic crude oil production continued its 5-year decline, averaging 7.4 million barrels per day. Some of the U.S. petroleum demand was met by stock drawdowns including the first sale from the Strategic Petroleum Reserve (SPR).

Product Demand

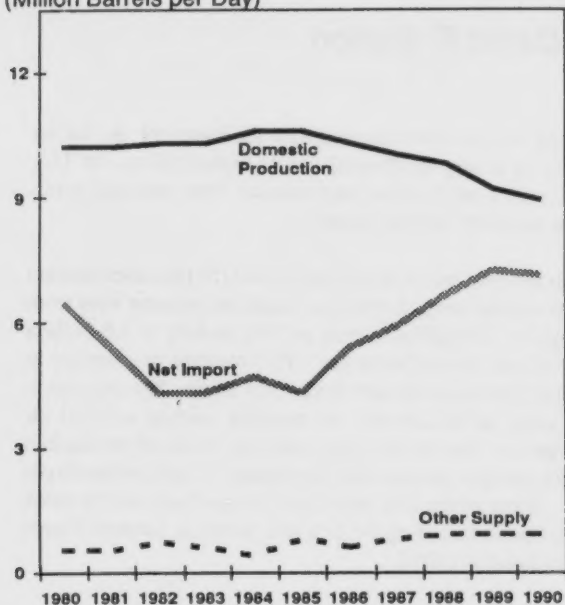
In response to a slowing economy, above normal winter temperatures, and prices increasing from the threat of supply disruptions, domestic demand for petroleum products declined slightly to 17 million barrels per day in 1990 (Figure FE2 and Table FE2), the first year-to-year decrease since 1983. The demand for petroleum products is influenced by economic growth, prices, weather conditions, and conservation efforts. Expansion of the economy contributes considerably to a rise in petroleum product consumption due to an increase in activities that require greater volumes of fuel. Increased industrial production, transportation of goods, and sales activities are major influences on petroleum demand. Another related element is the availability of disposable personal income that can be spent on travel.

Over the long term, petroleum price declines generally lead to increased purchases of fuel and petroleum-derived products. When petroleum prices are low, efforts to conserve petroleum tend to decrease because there is less incentive, for example, to drive small, fuel-efficient automobiles or to carpool. The reverse normally occurs when petroleum prices are high. Crisis-induced price hikes during the fall of 1990 decreased demand for all products except kerosene-type jet fuel.

Weather conditions can have a significant impact on the demand for heating fuels in winter and for residual fuel oil used to generate electricity in the summer. Consequently, if the weather is colder or warmer than normal during the year, there is a change in demand for these fuels. The warmer first quarter of 1990 decreased petroleum consumption from the colder previous quarter and allowed some product stocks to rebuild after the cold wave of December 1989.

Figure FE2. Petroleum Supply, 1980-1990

(Million Barrels per Day)



Source: Energy Information Administration, *Petroleum Supply Annual 1990*, Volume 1, Table 3, and predecessor reports. Other supply includes losses, stock changes and unaccounted crude oil.

In terms of thousand British thermal units (Btu) consumed per 1982 dollar of gross national product (GNP), petroleum consumption declined from 12.1 in 1975 to 8.1 in 1990. This was a 33-percent reduction in petroleum use based on the GNP expressed in constant dollars (Table FE1).

Motor Gasoline

Consumption of motor gasoline declined by 1.3 percent in 1990, to 7.2 million barrels per day (Figure FE3). The decrease was mainly attributed to a large increase in the average price of motor gasoline during the last 4 months of the year and partly to a gain in fuel efficiency (measured as miles per gallon) that more than offset the 2-percent increase in vehicle-miles traveled between 1989 and 1990. The use of unleaded motor gasoline continued to rise, accounting for 94.7 percent of motor gasoline demand in 1990.

During the first half of 1990, the average retail price of motor gasoline was 4 percent less than in the same period in 1989. After the August 2 invasion, prices peaked in November at \$1.43 per gallon (including taxes) and averaged \$1.22 for the year. The 15-percent increase was the largest year-to-year rise since 1979.

Distillate Fuel Oil

Demand for distillate fuel oil decreased by 4.3 percent from the 1989 level to 3.0 million barrels per day. This was the first drop in demand since 1982. The lower distillate fuel oil

demand was attributed to weaker transportation (diesel fuel) demand due to the slowdown in growth of industrial production. Milder weather in the first and last quarters of 1990 also contributed to lowered heating oil demand compared with 1989.

Distillate fuel oil production increased for the third consecutive year in 1990, averaging 2.9 million barrels per day. Production increased by 1 percent over the previous year, matching the annual rate of increase of the last 10 years. Imports of distillate fuel oil decreased to 278,000 barrels per day. The drop in demand was accompanied by a buildup of inventories.

Liquefied Petroleum Gases

Demand for liquefied petroleum gases (LPG) decreased by 6.7 percent from the 1989 level to 1.6 million barrels per day, while the supply (total production and imports) of LPG's decreased only by 2 percent. The drop in demand was accompanied by a buildup of inventories and a slight increase in exports. At year-end, stocks were at the highest level since 1986.

Of the LPG products, propane and normal butane accounted for most of the drop in LPG demand. The drop in demand for propane was due to warmer weather in the first quarter of the year which reduced heating requirements and to less petrochemical use in the last quarter of 1990 because of the high price of propane relative to other petrochemical feedstocks. The reduction in demand for normal butane resulted when more stringent gasoline volatility requirements during the summer months reduced its use as a gasoline blending component. The low demand for butane was attributed to its high price relative to alternative petrochemical feedstocks.

Jet Fuel

Throughout the last decade, jet fuel consumption rose substantially, from 1.0 million barrels per day in 1981 to 1.5 million barrels per day in 1990. This represents an average annual rate of increase of 4.8 percent, the fastest rate of growth for any major petroleum product. A primary reason for this rise was an increase in business and recreational air travel. Kerosene-type jet fuel accounted for 88 percent of jet fuel consumption in 1990. Kerosene-type jet fuel is used primarily in commercial turbojet and turboprop aircraft engines, while naphtha-type jet fuel is used in some military aircraft. Jet fuel was the only major petroleum product whose demand increased from the 1989 level.

Residual Fuel Oil

Residual fuel oil is consumed as a fuel for electric power generating plants, bunkering fuel in ocean-going vessels, boiler fuel at industrial plants, and heating fuel in commercial buildings. Demand for residual fuel oil decreased by 10.3

Table FE1. Petroleum Consumption per Dollar of GNP, Selected Years

Year	GNP ^a (trillion 1982 dollars)	Petroleum Consumption (quadrillion Btu)	Petroleum Consumption per Constant Dollar of GNP (thousand Btu per 1982 dollar)
1975	2.695	32.7	12.1
1980	3.187	34.2	10.7
1985	3.619	30.9	8.5
1990	4.157	33.6	8.1

^a GNP = Gross National Product.

Source: Energy Information Administration, *Monthly Energy Review*, April 1991, Tables 1.4 and 1.7.

percent to 1.2 million barrels per day in 1990. Electric utility demand decreased due to milder weather in the first half of the year compared with 1989, competitive prices for natural gas, increased use of coal, and the increased availability of hydroelectric power. Supply from imports decreased by 20 percent between 1989 and 1990 while refinery production decreased slightly.

Other Petroleum Products

Product supplied for the remaining petroleum products rose 5 percent compared with 1989. Heavy petrochemical feedstocks rose while naphtha used for petrochemical feedstocks remained the same as in 1989. Demand for petroleum coke rose by 10 percent, while asphalt and road oil rose by 7 percent compared with 1989. Still gas used in refinery and petrochemical plants declined by 1 percent.

Production and Reserves

Production

The principal source of U.S. petroleum supply is indigenous production of liquid hydrocarbons, a category comprising

crude oil, natural gas liquids, other hydrocarbons, and alcohol (Table FE2). During 1990, production of liquid hydrocarbons dropped by 224,000 barrels per day to 9.0 million barrels per day. Domestic crude oil production of 7.4 million barrels per day in 1990 declined by 3 percent from the previous year. The decline would have been steeper without the influence of Middle East events. The 1990 crude oil production level was the lowest since 1962.

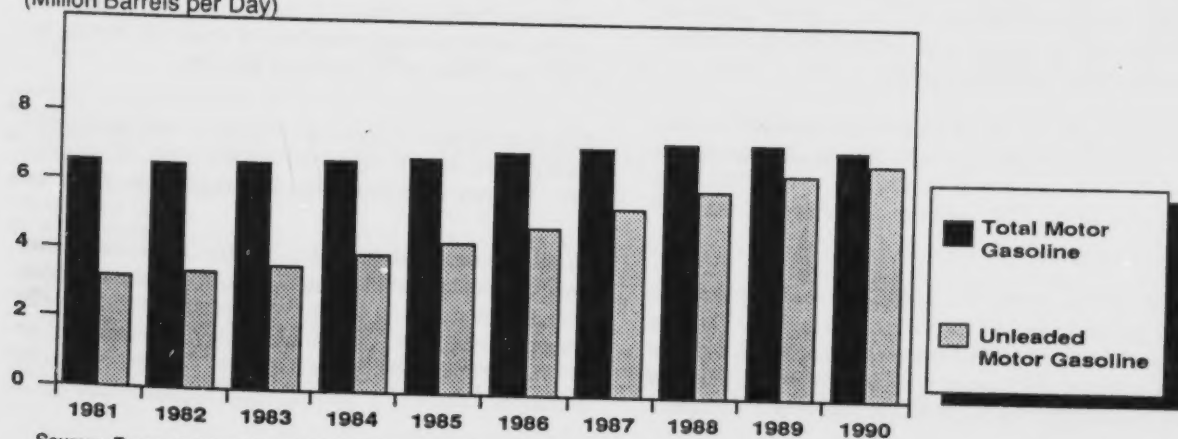
Crude oil production from the lower 48 States declined by 3 percent to 5.6 million barrels per day, continuing the slide that began in 1985. Alaskan crude oil production decreased for the second consecutive year to 1.8 million barrels per day. The main factor influencing the decline in Alaskan production was the natural decline of Alaska's giant North Slope Prudhoe Bay oil field. Also contributing to the decline were North Slope maintenance projects, shutdowns of the Trans-Alaska Pipeline System, and stormy weather and volcanic activity, which inhibited tanker loadings.

Proved Reserves

Proved reserves are defined as "those volumes of oil and gas that geological and engineering data demonstrate with reason-

Figure FE3. Motor Gasoline Product Supplied by Type, 1981 - 1990

(Million Barrels per Day)



Source: Energy Information Administration, *Petroleum Supply Annual 1990*, Volume 1, Table S4, and predecessor reports.

able certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions." Proved reserves make up the domestic production base and are the primary source of oil and gas used in the United States.

Estimates of reserves are revised as wells are drilled and placed in production. Through reservoir performance data, more information concerning the thickness, extent, and other properties of the reservoir become available. This information is applied to the estimates of proved reserves, which are then adjusted accordingly. Technology improvements and changes in economic and operating conditions are also considered in the estimate.

The additions to crude oil reserve estimates are increasingly coming from the reworking of established fields rather than from new discoveries (Figure FE4). The 1989 net crude oil additions, after revisions and adjustments, were 1,546 million barrels, less than the previous year. This rate was lower than the annual average of 1,731 million barrels of the 1980's. Nearly three-quarters of established field revisions came from the San Joaquin Basin in California (heavy oil projects), the Alaskan North Slope and West Texas (enhanced oil recovery projects), the Gulf of Mexico Federal Offshore, Colorado, and Wyoming.

New discoveries include extensions to current fields, new reservoirs discovered in old fields, and the discovery of new fields. New discoveries decreased during the last half of the 1980's. The total 1989 crude oil discoveries of 716 million barrels was the highest in the last 4 years.

Well-drilling activity is an expensive enterprise. The amount of drilling activity that financiers initiate relates directly to current crude oil and natural gas price levels and to anticipated price trends. In 1990, the average crude oil first purchase (wellhead) price rose to \$20.03 per barrel, an increase of 26 percent (Table FE3) from the previous year. After the 48-percent drop in wellhead prices in 1986, prices fluctuated over the next 4 years, rising in 1990 to 83 percent of the 1985 level. However, this recovery is tenuous. The recovery of world oil production after the Iraq embargo demonstrates the existence of excess world production capacity.

As a result of price uncertainties, well completions rose only slightly in 1990 to break a 5-year decline. In 1984, there were 42,510 oil wells completed (Table FE3). By 1990, well completions were 11,140 wells or 26 percent of the 1984 number.

In 1989, proved reserves of liquid hydrocarbons declined about 2 percent to 34.3 billion barrels (Table FE4). This was a result of crude oil proved reserves falling to 26.5 billion barrels, a decline of 1.2 percent, and a decrease in natural gas liquids proved reserves to 7.8 billion barrels or 5.7 percent.

Foreign Trade

Imports of crude oil and petroleum products are needed to satisfy that portion of U.S. petroleum demand that cannot be met by domestic production and stock drawdown. After a period of decline in the early 1980's, imports became increasingly important in the U.S. supply picture. Exports, on the other hand, comprise a smaller portion of total U.S. foreign trade in petroleum. U.S. refiners export refined products when they are in excess of regional needs, are unsuitable for domestic use, or can command a better price overseas.

Imports of crude oil and petroleum products decreased by 0.5 percent in 1990, to 8.0 million barrels per day (Table FE2). Total net imports (gross imports minus exports) of 7.2 million barrels per day also decreased and accounted for 42 percent of total product supplied in 1990. Net imports in 1990, as a percentage of product supplied, were comparable to those in 1978 and 1979 of 42 and 43 percent, respectively, when demand was at its peak.

Net crude oil imports increased by 1 percent over the previous year to 5.8 million barrels per day. Imports to the SPR were half of the 1989 level, while net imports of crude oil for other than the SPR increased by 2 percent.

Dependence on OPEC supplies increased slightly during 1990. Imports from OPEC rose by 4 percent for the year and accounted for 54 percent of the gross imports of crude oil and petroleum products into the United States (*Petroleum Supply Annual 1990*, Table S3). Crude oil imports from OPEC increased by 4 percent (Figure FE5 and Table FE 5), while petroleum product imports increased by 2 percent. Iraq's invasion of Kuwait and the resulting embargo led to a fear of a petroleum shortage, which drove crude oil prices up sharply. Accordingly, some petroleum product prices rose and stayed above the 1989 levels for the remainder of the year.

Among the OPEC countries, Saudi Arabia, Nigeria, and Venezuela contributed the largest shares of crude oil imports, providing 45 percent of all U.S. crude oil imports. Mexico and Canada, the other major suppliers of crude oil imports, together accounted for 23 percent of the total.

Although crude oil imports rose slightly in 1990, gross petroleum product imports were 4 percent lower than the previous year. Net petroleum product imports declined by 8 percent.

Of all petroleum products, residual fuel oil is the primary imported product and is second only to petroleum coke in amount exported. Net imports of residual fuel oil fell by 29 percent in 1990 to 292,000 barrels per day. The average share of residual fuel oil demand supplied by net imports was 24 percent in 1990.

Table FE2. U.S. Petroleum Supply--Salient Statistics, 1981-1990

Supply Elements	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Indigenous Production (million barrels per day)										
Crude Oil	8.6	8.6	8.7	8.9	9.0	8.7	8.3	8.1	7.6	7.4
Natural Gas Liquids	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6
Other ^a	s	.1	.1	s	.1	.1	.1	.1	.1	.1
Total	10.2	10.3	10.3	10.6	10.6	10.3	10.0	9.8	9.2	9.0
Imports (million barrels per day)										
Crude Oil (Industry)	4.1	3.3	3.1	3.2	3.1	4.1	4.6	5.1	5.8	5.9
Crude Oil (SPR) ^b	.3	.2	.2	.2	.1	s	.1	.1	.1	s
Products	1.6	1.6	1.7	2.0	1.9	2.0	2.0	2.3	2.2	2.1
Total	6.0	5.1	5.1	5.4	5.1	6.2	6.7	7.4	8.1	8.0
Exports (million barrels per day)										
Crude Oil	.2	.2	.2	.2	.2	.2	.2	.2	.1	.1
Products	.4	.6	.6	.5	.6	.6	.6	.7	.7	.7
Total	.6	.8	.7	.7	.8	.8	.8	.8	.9	.9
Total Net Imports (million barrels per day)	5.4	4.3	4.3	4.7	4.3	5.4	5.9	6.6	7.2	7.2
Stock Withdrawal (million barrels per day)										
Crude Oil (Industry)	s	s	s	(s)	.1	(s)	(s)	.1	s	.1
Crude Oil (SPR) ^b	(.3)	(.2)	(.2)	(.2)	(.1)	(.1)	(.1)	(.1)	(.1)	(s)
Products	.1	.3	.2	(.1)	.2	(.1)	.1	s	.1	(.1)
Total	(.2)	.1	s	(.3)	.1	(.2)	(s)	s	s	(.1)
Products Supplied (million barrels per day)										
Motor Gasoline	6.6	6.5	6.6	6.7	6.8	7.0	7.2	7.3	7.3	7.2
Distillate Fuel Oil	2.8	2.7	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.0
Residual Fuel Oil	2.1	1.7	1.4	1.4	1.2	1.4	1.3	1.4	1.4	1.2
Jet Fuels	1.0	1.0	1.0	1.2	1.2	1.3	1.4	1.4	1.5	1.5
Liquefied Petroleum Gases	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.7	1.7	1.6
Other Petroleum	2.1	1.9	2.0	2.0	2.0	2.1	2.2	2.3	2.3	2.4
Total	16.0	15.3	15.2	15.7	15.7	16.3	16.7	17.3	17.3	17.0
Year-End Stocks (million barrels)										
Crude Oil (Industry)	363	350	344	345	321	331	349	330	341	323
Crude Oil (SPR) ^b	230	294	379	451	493	512	541	560	580	586
Products	891	786	731	760	705	750	718	707	660	712
Total	1,484	1,430	1,454	1,556	1,519	1,593	1,607	1,597	1,581	1,621
Average Refiner Acquisition Cost of Crude Oil (dollars per barrel)										
	35.24	31.87	28.99	28.63	26.75	14.55	17.90	14.67	17.97	22.23
Average Domestic First Purchase Price of Crude Oil (dollars per barrel)										
	31.77	28.52	26.19	25.88	24.09	12.51	15.40	12.58	15.86	20.03

^a Includes other hydrocarbons and alcohol.

^b SPR = Strategic Petroleum Reserve.

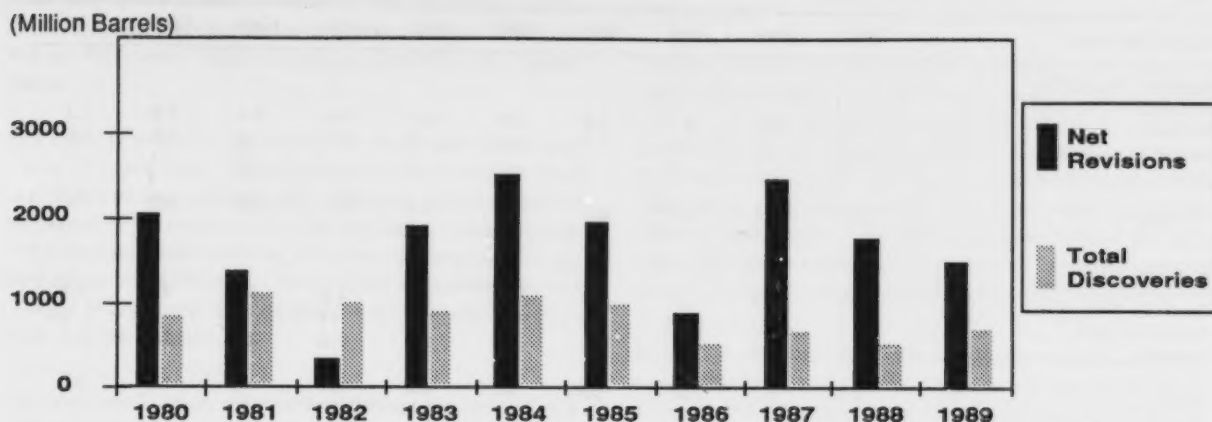
s = Less than 0.05 million barrels per day.

() = Stock build.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, *Annual Energy Review 1989*, *Petroleum Supply Annual 1990*, Volume 1, and predecessor reports; *Monthly Energy Review*, April 1991.

Figure FE4. Trends in Crude Oil Reserves Additions, 1980-1989



Source: Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1989 Annual Report*, Table 1.

Net imports of distillate fuel oil decreased by 20 percent to 169,000 barrels per day. Exports of distillate fuel oil from the United States increased due to high international demand and tighter foreign supply during the last half of the year that resulted from the loss of Kuwait refineries and a colder winter in Europe.

Net imports of finished motor gasoline declined to 286,000 barrels per day, a drop of 13 percent. Exports of motor gasoline increased by almost half. Typically, motor gasoline net imports have accounted for 4 to 5 percent of demand and 1990 was no exception. Net imports of LPG's decreased to 148,000 barrels per day.

Total crude oil and petroleum product exports decreased slightly in 1990 to 857,000 barrels per day (Table FE2).

Table FE3. Crude Oil Prices and Well Completions, 1980-1990

Year	Crude Oil First Purchase Price (dollars per barrel)	Crude Oil Well Completions (thousand wells)
1980	21.59	32.28
1981	31.77	42.84
1982	28.52	38.13
1983	26.19	37.12
1984	25.88	42.51
1985	24.09	34.94
1986	12.51	18.76
1987	15.40	16.22
1988	12.58	13.44
1989	15.86	10.40
1990	20.03	11.14

Sources: Crude Oil Prices – Energy Information Administration, *Monthly Energy Review*, April 1990, Table 9.1; Well Completions – Energy Information Administration, *Monthly Energy Review*, April 1991, Table 5.2.

Petroleum coke and residual fuel oil have been the principal export products for many years and continued the trend throughout 1990. Residual fuel oil and petroleum coke represented 24 percent and 25 percent, respectively, of 1990 U.S. petroleum exports. Both residual fuel oil and petroleum coke exports decreased in 1990.

Exports of crude oil decreased by 26,000 barrels per day to 115,000 barrels per day. Crude oil exports are restricted to oil produced from fields under the State waters of Alaska's Cook Inlet, certain domestically produced crude oil destined for Canada, and shipments to U.S. territories.

Following the August invasion, exports of some major petroleum products were at or near record high levels through the end of the year because prices rose much faster in Europe than in the United States. As a result, the post-invasion market favored U.S. exports to Europe, opposite the normal trend, and

Table FE4. Proved Reserves of Liquid Hydrocarbons, 1980-1989 (Million Barrels)

Year	Crude Oil	Natural Gas Liquids	Total
1980	29,805	6,728	36,533
1981	29,426	7,068	36,494
1982	27,858	7,221	35,079
1983	27,735	7,901	35,636
1984	28,446	7,643	36,089
1985	28,416	7,944	36,360
1986	26,889	8,165	35,054
1987	27,256	8,147	35,403
1988	26,825	8,238	35,063
1989	26,501	7,769	34,270

Source: Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1989 Annual Report*, Table 1.

incremental supplies from the United States were sent to foreign markets. In December, exports of most major products fell back to normal levels, but distillate fuel oil exports hit a new record, as they were almost double the November level. Consequently, total product exports were at a record high level for the second consecutive month.

Inventory Activity

Year-end 1990 total petroleum stock levels increased slightly from the previous year-end level to 1,621 million barrels (Table FE2). Of this total, crude oil stocks accounted for 908 million barrels, with 586 million barrels in the SPR. The crude oil inventory in the SPR was 5.8 million barrels higher than in December 1989. Petroleum product stocks were 712 million barrels at the end of 1990, an increase of 8 percent over the 1989 level.

An increase in gross imports, coupled with the seasonal decline in crude oil inputs to refineries combined to push crude oil inventories in March 1990 to their highest level since July 1981. Crude oil stocks continued to build until June 1990, when stocks peaked at 384 million barrels. By September 1990, substantial stock drawdowns offset the loss of imports from Iraq and Kuwait. The drawdowns eliminated much of the cushion that had existed in previous months and crude oil stocks finished the year 19 million barrels below the end of 1989.

Total motor gasoline stocks during 1990 lagged consistently behind 1989 levels until September, when stocks hit 229 million barrels, compared with 227 million barrels in September 1989. The abrupt rise in retail gasoline prices and the end of the summer driving season combined to sharply lower motor gasoline demand during the fall of 1990.

Throughout the summer driving season (June through August), stocks of motor gasoline remained particularly tight. During the peak driving months of July and August, stocks

were 10 million barrels below the same months in 1989. By the end of 1990, motor gasoline stocks climbed by 3 percent above the 1989 level.

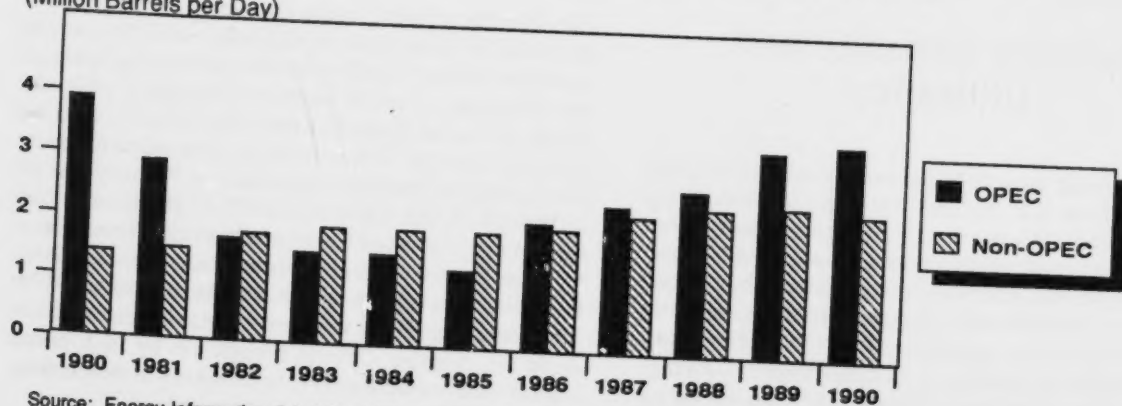
Warmer-than-normal temperatures during the first and fourth quarters of 1990 and a sluggish economy helped keep distillate fuel oil demand unusually low. This pushed primary stocks of distillate fuel oil to a yearly high of 136 million barrels in October 1990, 14 million barrels higher than in October 1989. By the end of 1990, distillate fuel oil stocks fell to 132 million barrels, nearly 25 percent above the year-end 1989 level.

Warmer weather, increased competition from natural gas, and slow economic growth caused residual fuel oil stocks to remain high for the better part of the year. However, because of the higher level of stocks in 1990, the normal winter heating seasonal buildup, which usually occurs between July and November of each year, was less than in prior years. By December 1990, however, residual fuel oil stocks were 49 million barrels, compared with 44 million barrels in December 1989.

Mild weather during the first quarter of 1990, petrochemical feedstock use, and Reid Vapor Pressure (RVP) requirements were the major factors affecting LPG inventories during 1990. A major cold wave brought on by below normal temperatures during late 1989 caused propane stock levels to plummet by 27 percent from the level a year earlier to 33 million barrels in January 1990. By December 1990, propane stocks increased by 17 million barrels over the low December 1989 level to end the year at 49 million barrels. As a result of strong demand for gasoline blending, petrochemical feedstock, and fuel use, normal butane inventories were drawn down in January 1990 to a level more than 24 percent below the January 1989 level. However, because of butane's exclusion from the gasoline pool to comply with Environmental Protection Agency summertime volatility regulations, inventories of normal butane recovered to a level of 39 million barrels by August 1990. This was a gain of 19.1 percent above the August 1989 level.

Figure FE5. Crude Oil Imports from OPEC and Non-OPEC Sources, 1980-1990

(Million Barrels per Day)



Source: Energy Information Administration, *Petroleum Supply Annual 1990*, Volume 1, Table 21, and predecessor reports.

Table FE5. Gross Imports of Crude Oil by Country of Origin, 1981-1990
(Million Barrels per Day)

Country of Origin	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Arab OPEC										
Algeria	0.26	0.09	0.18	0.19	0.08	0.08	0.11	0.06	0.06	0.06
Iraq	.00	s	.01	.01	.05	.08	.08	.34	.44	.51
Kuwait	.00	s	.01	.02	s	.03	.07	.08	.15	.08
Qatar	.01	.01	.00	s	.00	.01	.00	.00	.00	.00
Saudi Arabia	1.11	.53	.32	.31	.13	.62	.64	.90	1.12	1.19
United Arab Emirates	.08	.08	.02	.09	.04	.04	.06	.02	.02	.0
Libya	.32	.02	.00	.00	.00	.00	.00	.00	.00	.00
Neutral Zone	-	-	-	-	-	-	-	.01	.00	.00
Subtotal	1.7	.74	.53	.63	.30	.85	.96	1.41	1.79	1.86
Other OPEC										
Ecuador	.04	.03	.06	.05	.06	.06	.02	.03	.08	.04
Gabon	.04	.04	.06	.06	.05	.02	.03	.02	.05	.06
Indonesia	.32	.23	.32	.30	.29	.30	.26	.19	.16	.10
Nigeria	.61	.51	.30	.21	.28	.44	.53	.61	.80	.78
Venezuela	.15	.16	.16	.25	.31	.42	.49	.44	.49	.66
Iran	.00	.04	.05	.01	.03	.02	.10	s	.00	.00
Subtotal	1.15	1.00	.94	.88	1.01	1.26	1.43	1.28	1.58	1.65
Total OPEC	2.92	1.73	1.48	1.51	1.31	2.11	2.40	2.70	3.38	3.51
Non-OPEC										
Mexico	.47	.65	.77	.66	.72	.62	.60	.67	.72	.69
Canada	.16	.21	.27	.34	.47	.57	.61	.68	.63	.64
United Kingdom	.37	.44	.37	.38	.28	.32	.30	.25	.16	.15
Trinidad and Tobago	.10	.09	.08	.09	.10	.09	.08	.07	.07	.08
Angola	.05	.04	.07	.09	.10	.10	.18	.20	.28	.24
Norway	.11	.10	.07	.11	.03	.05	.07	.06	.13	.10
Colombia	.00	.00	.00	.00	.00	.06	.11	.11	.14	.14
All Other	.21	.22	.23	.25	.20	.25	.32	.36	.35	.33
Subtotal	1.47	1.76	1.85	1.91	1.89	2.07	2.27	2.41	2.47	2.37
Total Imports	4.40	3.49	3.33	3.43	3.20	4.18	4.67	5.11	5.84	5.88

s=Less than 0.005 million barrels per day.

Note: Totals may not equal sums of components due to independent rounding. Prior to 1988, data on imports from the Neutral Zone were included with imports from Saudi Arabia and Kuwait.

Source: Energy Information Administration, *Petroleum Supply Annual 1990*, Volume 1, Table 21 and predecessor reports.

Refinery Capacity and Utilization

The U.S. refining industry experienced brisk activity during 1990, as evidenced by high refinery utilization rates during several months of the year. During 1990, gross refinery inputs to atmospheric crude oil distillation units averaged 13.6 million barrels per day, relatively unchanged from the previous year's level. Operable distillation capacity of U.S. refineries averaged 15.6 million barrels per day in 1990. The refinery utilization rate (measured as gross inputs divided by average operable capacity) increased slightly to 87.1 percent during 1990.

The operable refinery utilization rate in the early winter months of 1990 increased significantly over 1989 levels as operations at most U.S. refineries returned to normal following the disruptions by severe weather in December 1989. Although this period is usually a time when refinery inputs and utilization rates are relatively low in preparation for spring motor gasoline production, utilization in February was the highest rate for that month since 1977. High utilization rates are not usually sustained for extended periods of time, because refineries become prone to equipment failures and accidents. Utilization rates began to drop during the last quarter of 1990 below levels recorded a year earlier due to increased costs of crude oil, sluggish demand brought on by high prices, warmer-than-normal weather, the slowdown in the economy, and the continuation of process turnarounds.

Table FE6. Exports of Crude Oil and Major Products, 1981-1990
(Million Barrels per Day)

Commodity	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crude Oil	0.23	0.24	0.16	0.18	0.20	0.15	0.15	0.15	0.14	0.12
Natural Gas Liquids	.04	.07	.07	.05	.06	.04	.04	.05	.04	.04
Finished Motor Gasoline	s	.02	.01	.01	.01	.03	.04	.02	.04	.06
Distillate Fuel Oil	s	.07	.06	.05	.07	.10	.07	.07	.10	.11
Residual Fuel Oil	.12	.21	.19	.19	.20	.15	.19	.20	.22	.21
Petroleum Coke	.14	.16	.20	.19	.19	.24	.21	.23	.23	.22
Other Products	.06	.06	.05	.05	.05	.07	.07	.09	.09	.10
Total Exports	.60	.82	.74	.72	.78	.78	.76	.82	.86	.86

s=Less than 0.005 million barrels per day.

Note: Totals may not equal sums of components due to independent rounding.

Source: Energy Information Administration, *Petroleum Supply Annual 1990*, Volume 1, Table 28 and predecessor reports.

Summary Statistics



Incinerators such as this one at a chemical installation turn toxic chemicals into water vapor and other harmless elements.

Table S1. Crude Oil^a and Petroleum Products Overview, 1973 - Present

Year/Month		Field Production			Stock Change ^b		Petroleum Products Supplied	Ending Stocks ^c
		Total Domestic ^d	Crude Oil	Natural Gas Plant Liquids	Crude Oil ^e	Petroleum Products		Crude Oil ^e and Petroleum Products
								Thousand Barrels per Day
1973	Average	10,975	9,208	1,738	-11	148	17,308	1,008
1974	Average	10,498	8,774	1,688	62	117	16,853	^h 1,074
1975	Average	10,045	8,375	1,633	^h 17	^h 15	16,322	1,133
1976	Average	9,774	8,132	1,603	39	-98	17,481	1,112
1977	Average	9,913	8,245	1,618	170	378	18,431	1,312
1978	Average	10,328	8,707	1,567	78	-172	18,847	1,278
1979	Average	10,179	8,552	1,584	148	25	18,513	1,341
1980	Average	10,214	8,597	1,573	98	42	17,056	^h 1,392
1981	Average	10,230	8,572	1,609	^h 290	^h -130	16,058	1,484
1982	Average	10,252	8,649	1,550	136	-283	15,296	^h 1,430
1983	Average	10,299	8,688	1,559	^h 214	^h -234	15,231	1,454
1984	Average	10,554	8,879	1,630	199	81	15,726	1,558
1985	Average	10,636	8,971	1,609	50	-153	15,726	1,519
1986	Average	10,289	8,680	1,551	78	124	16,281	1,593
1987	Average	10,008	8,349	1,595	128	-87	16,665	1,607
1988	January	9,876	8,250	1,575	-43	-294	17,403	1,597
	February	10,018	8,374	1,605	133	-868	17,760	1,578
	March	10,071	8,374	1,636	219	-748	17,612	1,559
	April	9,946	8,288	1,618	190	145	16,561	1,578
	May	9,899	8,229	1,627	96	1,048	16,197	1,614
	June	9,833	8,170	1,616	43	-109	17,059	1,612
	July	9,713	8,040	1,618	-261	819	16,695	1,629
	August	9,762	8,079	1,616	-488	307	17,482	1,624
	September	9,575	7,895	1,621	-83	245	17,072	1,628
	October	9,737	8,023	1,661	399	-333	17,580	1,630
	November	9,751	8,023	1,666	3	25	17,620	1,631
	December	9,641	7,942	1,634	-188	-911	18,365	1,597
	Average	9,818	8,140	1,625	1	-29	17,283	--
1989	January	9,678	7,937	1,664	179	563	17,269	1,620
	February	9,441	7,788	1,607	47	-733	17,920	1,601
	March	9,284	7,575	1,650	-127	-924	17,989	1,568
	April	9,501	7,772	1,674	494	413	16,624	1,596
	May	8,498	7,816	1,620	271	598	16,546	1,623
	June	9,188	7,624	1,507	-434	-64	17,497	1,608
	July	9,055	7,444	1,541	148	1,182	16,453	1,649
	August	9,106	7,544	1,504	283	-104	17,360	1,654
	September	9,096	7,548	1,480	-144	577	16,795	1,667
	October	8,983	7,453	1,478	73	-378	17,304	1,658
	November	9,084	7,536	1,483	541	-367	17,311	1,663
	December	8,734	7,337	1,343	-302	-2,335	18,858	1,581
	Average	9,219	7,613	1,548	86	-129	17,325	--
1990	January	9,178	7,546	1,541	273	1,284	16,964	1,630
	February	9,147	7,497	1,570	-330	507	17,175	1,635
	March	9,034	7,433	1,528	1,057	-823	17,087	1,642
	April	8,979	7,407	1,493	26	-83	16,778	1,640
	May	8,923	7,328	1,502	479	532	16,915	1,672
	June	8,645	7,106	1,458	72	378	17,165	1,685
	July	8,735	7,173	1,484	-154	929	17,084	1,709
	August	8,931	7,287	1,575	-227	-113	18,050	1,699
	September	8,891	7,224	1,597	-896	887	16,512	1,698
	October	9,301	7,542	1,667	111	-879	16,934	1,674
	November	9,155	7,387	1,690	-364	-322	16,695	1,654
	December	9,019	7,338	1,604	-528	-544	16,494	1,621
	Average	8,994	7,355	1,539	-35	142	16,988	--

^a Includes lease condensate.^b A negative number indicates a decrease in stocks and a positive number indicates an increase.^c Stocks are totals as of end of period.^d Includes crude oil, natural gas plant liquids, other hydrocarbons, and alcohol.^e Includes stocks located in the Strategic Petroleum Reserve.^f Includes crude oil for storage in the Strategic Petroleum Reserve.^g Net imports equal imports minus exports.^h In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations.

See Summary Statistics Explanatory Note 2.

Footnotes continued on following page.

Table S1. Crude Oil^a and Petroleum Products Overview, 1973 - Present (Continued)

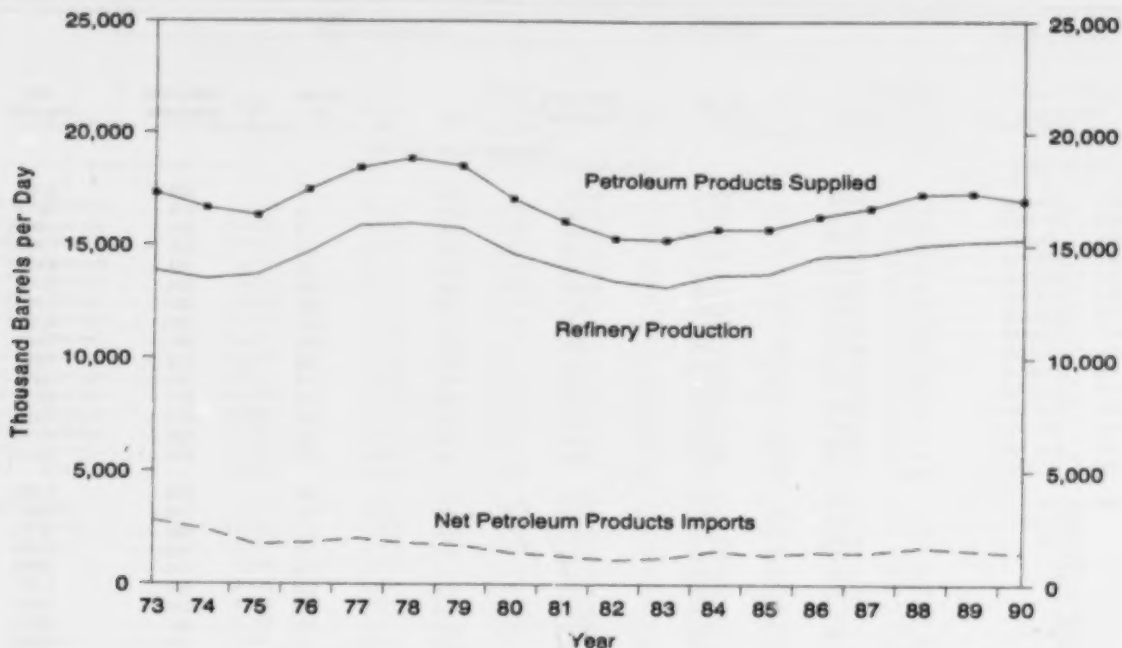
Year/Month		Imports			Exports			Net Imports ²
		Total	Crude Oil ¹	Petroleum Products	Total	Crude Oil	Petroleum Products	
Thousand Barrels per Day								
1973	Average	6,256	3,244	3,012	231	2	229	6,025
1974	Average	6,112	3,477	2,635	221	3	218	5,892
1975	Average	6,056	4,105	1,951	209	6	204	5,846
1976	Average	7,313	5,287	2,026	223	8	215	7,090
1977	Average	8,807	6,615	2,193	243	50	193	8,565
1978	Average	8,363	6,356	2,008	362	158	204	8,002
1979	Average	8,456	6,519	1,937	472	235	237	7,984
1980	Average	6,909	5,263	1,646	544	287	258	6,365
1981	Average	5,996	4,396	1,599	595	226	367	5,401
1982	Average	5,113	3,488	1,625	815	236	579	4,298
1983	Average	5,051	3,329	1,722	739	184	575	4,312
1984	Average	5,437	3,426	2,011	722	181	541	4,715
1985	Average	5,067	3,201	1,866	781	204	577	4,286
1986	Average	6,224	4,178	2,045	785	154	631	5,439
1987	Average	6,678	4,674	2,004	764	151	613	5,914
1988	January	7 181	4,662	2,519	885	206	679	6,206
	February	7,256	4,650	2,605	864	146	718	6,392
	March	6,944	4,868	2,076	834	213	622	6,110
	April	7,270	5,167	2,103	676	114	562	6,594
	May	7,469	5,339	2,130	814	138	676	6,655
	June	7,239	5,322	1,917	938	138	800	6,301
	July	7,297	5,100	2,197	826	186	640	6,471
	August	7,386	5,089	2,296	814	152	661	6,572
	September	7,506	5,212	2,294	673	119	554	6,833
	October	7,830	5,551	2,279	732	166	566	7,098
	November	7,714	5,070	2,644	717	148	569	6,997
	December	7,727	5,230	2,497	1,008	129	879	6,719
	Average	7,402	5,107	2,295	815	155	661	6,587
1989	January	8,255	5,661	2,594	761	137	624	7,494
	February	8,032	5,305	2,727	875	208	666	7,157
	March	7,456	5,035	2,421	860	156	704	6,596
	April	8,078	5,750	2,328	810	139	670	7,268
	May	7,778	5,729	2,049	791	131	661	6,986
	June	7,977	5,976	2,002	975	243	732	7,002
	July	8,369	6,214	2,155	780	69	711	7,589
	August	8,560	6,565	1,995	967	182	805	7,593
	September	8,002	6,028	1,975	655	32	623	7,347
	October	8,301	6,187	2,115	791	61	730	7,511
	November	8,341	6,171	2,170	975	120	855	7,366
	December	7,579	5,463	2,116	1,067	247	821	6,512
	Average	8,061	5,843	2,217	859	142	717	7,202
1990	January	9,197	6,212	2,985	709	132	578	8,488
	February	8,309	5,895	2,505	822	102	720	7,577
	March	7,965	6,117	1,848	880	132	748	7,084
	April	7,858	5,813	2,045	761	111	649	7,097
	May	8,834	6,454	2,380	690	112	578	8,144
	June	8,747	6,423	2,323	803	88	715	7,944
	July	9,048	6,855	2,193	696	89	606	8,353
	August	8,644	6,452	2,192	850	64	785	7,794
	September	7,361	5,664	1,698	847	68	779	6,514
	October	6,717	5,132	1,585	949	104	844	5,768
	November	7,003	5,085	1,918	1,085	137	948	5,918
	December	6,439	4,611	1,828	1,187	162	1,026	5,252
	Average	8,018	5,894	2,123	857	109	748	7,161

Footnotes continued.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

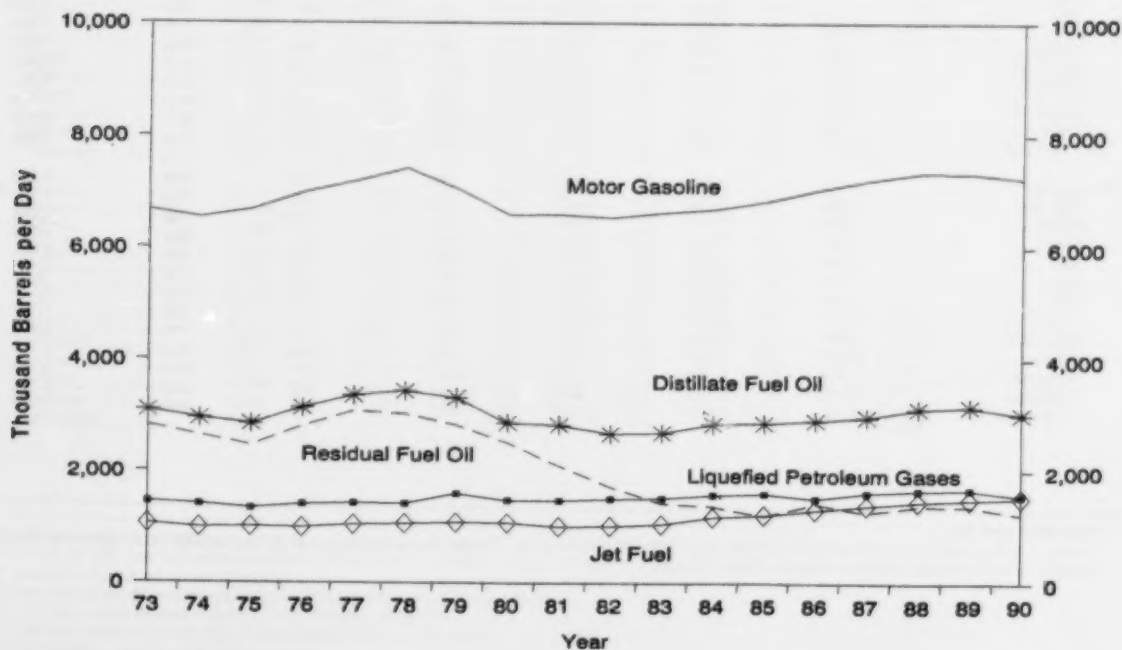
Source: See Summary Statistics Table and Figure Sources.

Figure S1. Petroleum Overview, 1973 - Present



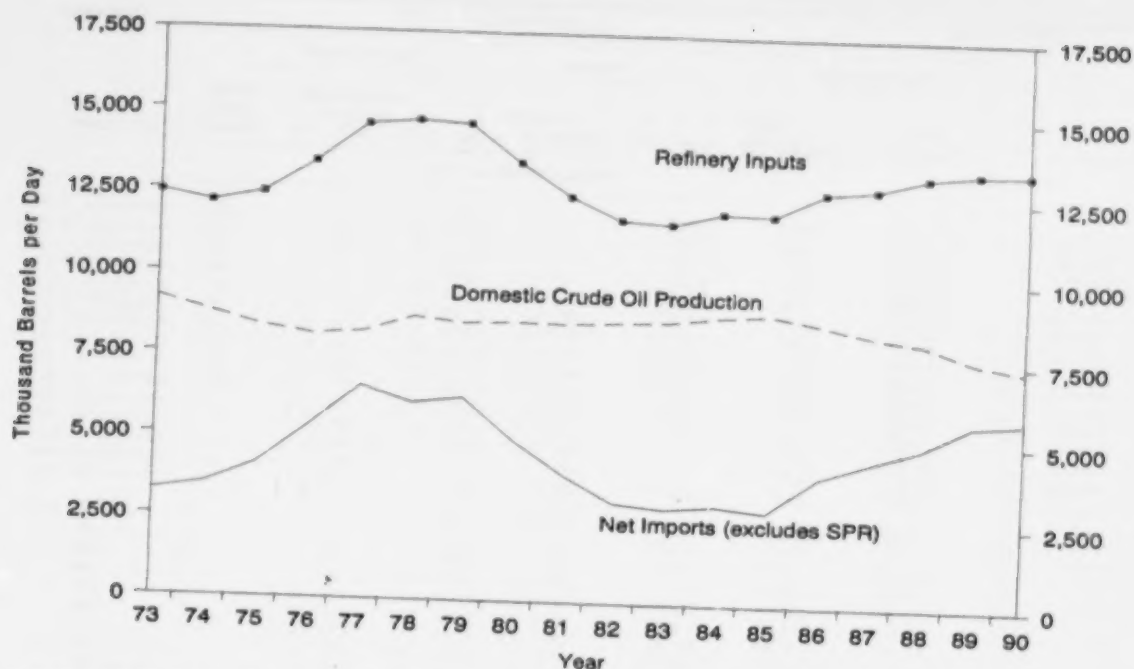
Source: Energy Information Administration, *Petroleum Supply Annual*, Table S1. See Summary Statistics Table and Figure Sources.

Figure S2. Petroleum Products Supplied, 1973 - Present



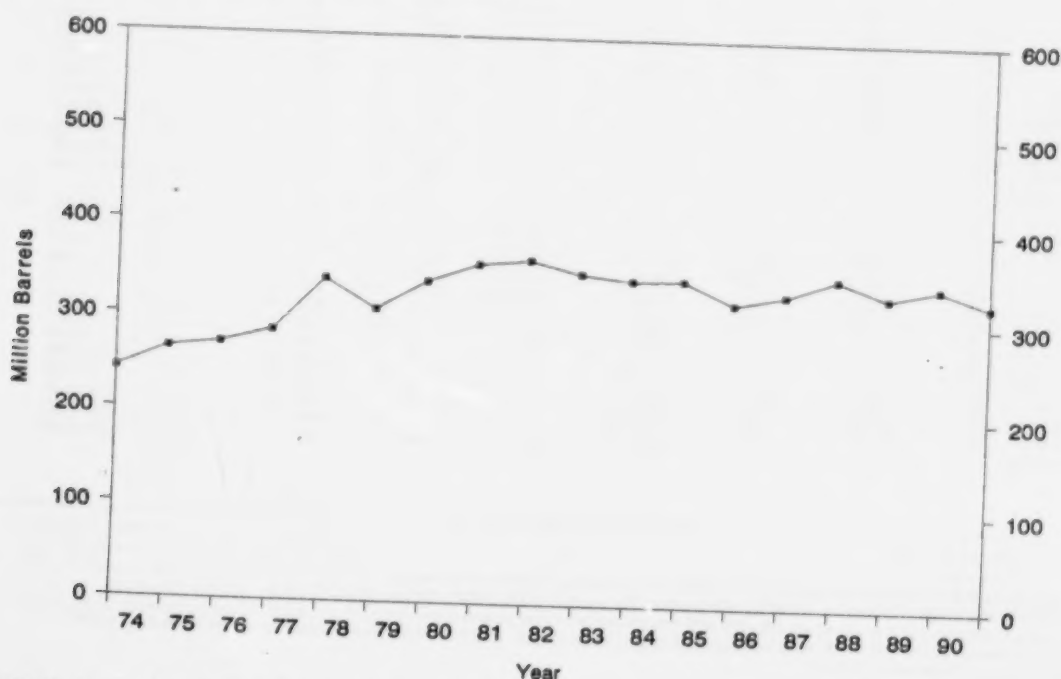
Source: Energy Information Administration, *Petroleum Supply Annual*, Tables S4 - S8. See Summary Statistics Table and Figure Sources.

Figure S3. Crude Oil Supply and Disposition, 1973 - Present



Source: Energy Information Administration, Petroleum Supply Annual, Table S2. See Summary Statistics Table and Figure Sources.

Figure S4. Crude Oil Ending Stocks¹, 1973 - Present



¹Excludes stocks held in the Strategic Petroleum Reserve (SPR).

Source: Energy Information Administration, Petroleum Supply Annual, Table S2. See Summary Statistics Table and Figure Sources.

Table S2. Crude Oil^a Supply and Disposition, 1973 - Present

Year/Month		Supply						Disposition	
		Field Production		Imports			Unaccounted for Crude Oil ^d	Crude Used Directly ^e	Crude Losses
		Total Domestic	Alaskan	Total	SPR	Other			
1973	Average	9,208	198	3,244	--	3,244	3	-19	13
1974	Average	8,774	193	3,477	--	3,477	-25	-15	13
1975	Average	8,375	191	4,105	--	4,105	17	-17	13
1976	Average	8,132	173	5,287	--	5,287	77	-18	15
1977	Average	8,245	464	6,615	21	6,594	-6	-14	16
1978	Average	8,707	1,229	6,356	162	6,195	-57	-14	16
1979	Average	8,552	1,401	6,519	67	6,452	-11	-13	16
1980	Average	8,597	1,617	5,263	44	5,219	34	-13	15
1981	Average	8,572	1,609	4,396	256	4,141	83	-58	5
1982	Average	8,649	1,696	3,488	165	3,323	71	-59	3
1983	Average	8,686	1,714	3,329	234	3,096	114	--	2
1984	Average	8,679	1,722	3,426	197	3,229	185	--	2
1985	Average	8,971	1,825	3,201	118	3,083	145	--	1
1986	Average	8,680	1,867	4,178	48	4,130	139	--	(s)
1987	Average	8,349	1,962	4,674	73	4,601	145	--	(s)
1988	January	8,250	1,999	4,662	67	4,595	216	--	(s)
	February	8,374	2,070	4,650	49	4,601	-50	--	(s)
	March	8,374	2,086	4,868	23	4,845	258	--	(s)
	April	8,288	2,029	5,167	78	5,090	27	--	(s)
	May	8,229	2,016	5,339	22	5,317	125	--	(s)
	June	8,170	1,984	5,322	70	5,252	208	--	(s)
	July	8,040	1,960	5,100	42	5,058	432	--	1
	August	8,079	2,009	5,089	26	5,064	278	--	(s)
	September	7,895	2,019	5,212	84	5,128	228	--	(s)
	October	8,023	2,010	5,551	43	5,508	160	--	(s)
	November	8,023	2,027	5,070	89	4,981	258	--	(s)
	December	7,942	1,996	5,230	27	5,203	196	--	(s)
	Average	8,140	2,017	5,107	51	5,055	196	--	(s)
1989	January	7,937	1,958	5,661	65	5,596	94	--	(s)
	February	7,788	1,962	5,305	84	5,221	-26	--	(s)
	March	7,575	1,686	5,035	75	4,960	426	--	(s)
	April	7,772	1,690	5,750	59	5,690	91	--	(s)
	May	7,816	1,973	5,729	77	5,652	280	--	(s)
	June	7,624	1,861	5,976	55	5,920	135	--	(s)
	July	7,444	1,725	6,214	75	6,139	426	--	(s)
	August	7,544	1,870	6,565	32	6,533	213	--	(s)
	September	7,548	1,875	6,028	59	5,969	121	--	1
	October	7,453	1,877	6,187	37	6,149	-125	--	0
	November	7,536	1,915	6,171	41	6,131	397	--	(s)
	December	7,337	1,904	5,463	12	5,452	343	--	(s)
	Average	7,613	1,874	5,843	56	5,787	200	--	(s)
1990	January	7,546	1,864	6,212	24	6,188	178	--	(s)
	February	7,497	1,834	5,895	12	5,883	-98	--	0
	March	7,433	1,819	6,117	44	6,073	540	--	0
	April	7,407	1,802	5,813	38	5,775	-9	--	(s)
	May	7,328	1,765	6,454	89	6,365	225	--	0
	June	7,106	1,612	6,423	17	6,407	349	--	(s)
	July	7,173	1,687	6,855	0	6,855	150	--	0
	August	7,287	1,727	6,452	95	6,357	259	--	(s)
	September	7,224	1,702	5,664	0	5,664	402	--	(s)
	October	7,542	1,864	5,132	0	5,132	382	--	(s)
	November	7,387	1,746	5,065	0	5,065	269	--	(s)
	December	7,338	1,838	4,611	0	4,611	409	--	(s)
	Average	7,355	1,773	5,894	27	5,867	258	--	(s)

^a Includes lease condensate.^b Stocks are totals as of end of period.^c A negative number indicates a decrease in stocks and a positive number indicates an increase.^d Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.^e Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.^f Stocks of Alaskan crude oil in transit were included beginning in January 1981. Stock changes are calculated using new basis stock levels.

See Summary Statistics Explanatory Note 2.

Footnotes continued on following page.

Table S2. Crude Oil^a Supply and Disposition, 1973 - Present (Continued)

Year/Month		Disposition					Ending Stocks ^b		
		Stock Change ^c		Refinery Inputs	Exports	Product Supplied ^d	Total	SPR	Other Primary
		SPR	Other						
1973	Average	--	-11	12,431	2	--	242	--	242
1974	Average	--	62	12,133	3	--	265	--	265
1975	Average	--	17	12,442	6	--	271	--	271
1976	Average	--	39	13,416	8	--	285	--	285
1977	Average	20	150	14,602	50	--	348	7	340
1978	Average	163	-84	14,739	158	--	376	67	309
1979	Average	67	81	14,648	235	--	430	91	339
1980	Average	45	52	13,481	287	--	466	108	358
1981	Average	336	9-46	12,470	228	--	594	230	363
1982	Average	174	-38	11,774	236	--	644	294	350
1983	Average	234	9-20	11,685	164	66	723	379	344
1984	Average	195	4	12,044	181	64	796	451	345
1985	Average	117	-67	12,002	204	60	814	493	321
1986	Average	50	28	12,716	154	49	843	512	331
1987	Average	80	49	12,854	151	34	890	541	349
1988	January	67	-110	12,920	206	45	888	543	346
	February	49	84	12,644	146	52	892	544	348
	March	26	193	13,016	213	52	899	545	354
	April	77	112	13,135	114	42	905	547	357
	May	22	74	13,425	138	34	908	548	360
	June	70	-27	13,487	138	32	909	550	359
	July	42	-302	13,617	186	29	901	551	349
	August	26	-514	13,752	152	30	886	552	334
	September	84	-167	13,261	119	37	883	555	329
	October	43	356	13,126	166	42	896	556	340
	November	89	-86	13,156	148	44	896	559	337
	December	27	-215	13,381	129	44	890	560	330
	Average	52	-51	13,246	155	40	--	--	--
1989	January	65	115	13,330	137	47	895	562	334
	February	85	-38	12,765	208	48	897	564	333
	March	75	-202	12,963	156	45	893	566	327
	April	60	434	12,956	139	23	908	568	340
	May	77	194	13,405	131	19	916	570	346
	June	44	-478	13,905	243	20	903	572	331
	July	86	62	13,848	69	19	908	574	333
	August	32	251	13,861	162	17	916	575	341
	September	59	-203	13,791	32	18	912	577	335
	October	37	36	13,360	61	21	914	578	336
	November	41	500	13,420	120	25	930	579	351
	December	12	-313	13,165	247	33	921	580	341
	Average	56	30	13,401	142	28	--	--	--
1990	January	24	249	13,491	132	40	930	581	349
	February	12	-342	13,487	102	36	920	581	339
	March	44	1,013	12,876	132	24	953	582	371
	April	38	-12	13,051	111	24	954	583	370
	May	89	389	13,386	112	30	969	586	383
	June	16	56	13,689	88	29	971	587	384
	July	0	-154	14,212	89	31	966	587	379
	August	94	-321	14,142	64	18	959	590	370
	September	(s)	-897	14,104	68	14	932	590	343
	October	-8	120	12,825	104	15	936	589	346
	November	-111	-253	12,953	137	13	925	586	339
	December	-10	-517	12,708	162	15	908	586	323
	Average	16	-51	13,409	109	24	--	--	--

Footnotes continued.

(s) = Less than 500 barrels per day.

SPR = Strategic Petroleum Reserve.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See Summary Statistics Table and Figure Sources.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present

Year/Month		Imports from Arab-OPEC Sources							
		Algeria		Iraq		Kuwait		Libya	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day							
1973	Average	136	120	4	4	47	42	184	133
1974	Average	190	180	0	0	5	5	4	4
1975	Average	282	264	2	2	16	4	232	223
1976	Average	432	408	26	26	5	1	453	444
1977	Average	559	544	74	74	48	42	723	704
1978	Average	649	634	82	82	6	5	654	638
1979	Average	636	608	88	88	8	5	658	642
1980	Average	488	456	28	28	27	27	554	548
1981	Average	311	261	(a)	0	0	0	319	317
1982	Average	170	90	3	3	5	2	26	23
1983	Average	240	176	10	10	14	7	0	0
1984	Average	323	194	12	12	36	24	1	0
1985	Average	187	84	46	46	21	4	4	0
1986	Average	271	78	81	81	68	28	0	0
1987	Average	295	115	83	82	84	70	0	0
1988	January	333	96	124	124	242	192	0	0
	February	358	56	51	51	89	89	0	0
	March	259	59	248	248	45	45	0	0
	April	342	37	272	272	12	12	0	0
	May	320	71	295	295	27	0	0	0
	June	262	52	430	416	9	0	0	0
	July	225	32	567	567	0	0	0	0
	August	257	50	439	439	170	157	0	0
	September	289	66	492	479	173	161	0	0
	October	326	61	482	478	1	0	0	0
	November	322	39	403	403	203	186	0	0
	December	312	72	331	331	128	124	0	0
	Average	300	58	345	343	92	80	0	0
1989	January	335	93	345	345	32	32	0	0
	February	310	62	430	430	79	79	0	0
	March	272	40	361	361	0	0	0	0
	April	235	75	555	526	0	0	0	0
	May	272	34	424	402	64	64	0	0
	June	205	30	384	384	309	303	0	0
	July	263	43	530	530	334	314	0	0
	August	216	77	528	517	348	348	0	0
	September	256	58	513	498	271	271	0	0
	October	250	74	509	495	191	191	0	0
	November	323	71	443	442	148	148	0	0
	December	298	60	372	367	105	105	0	0
	Average	269	60	449	441	157	155	0	0
1990	January	413	97	690	657	250	250	0	0
	February	282	47	500	488	150	140	0	0
	March	301	67	585	580	100	82	0	0
	April	234	62	588	588	50	50	0	0
	May	259	38	727	724	64	64	0	0
	June	333	72	708	708	105	94	0	0
	July	308	70	1,120	1,120	43	33	0	0
	August	360	80	966	966	243	207	0	0
	September	279	69	318	318	33	33	0	0
	October	173	15	0	0	0	0	0	0
	November	177	46	0	0	0	0	0	0
	December	242	82	0	0	0	0	0	0
	Average	280	63	518	514	86	79	0	0

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Arab-OPEC Sources							
		Qatar		Saudi Arabia ^a		United Arab Emirates		Total Arab OPEC	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day							
1973	Average	7	7	488	462	71	71	915	838
1974	Average	17	17	481	438	74	69	752	713
1975	Average	18	18	715	701	117	117	1,383	1,330
1976	Average	24	24	1,230	1,222	254	254	2,424	2,378
1977	Average	67	67	1,380	1,373	335	333	3,185	3,136
1978	Average	64	64	1,144	1,142	385	385	2,963	2,930
1979	Average	31	31	1,356	1,347	281	281	3,058	3,002
1980	Average	22	22	1,261	1,250	172	172	2,551	2,503
1981	Average	7	7	1,129	1,112	81	77	1,848	1,774
1982	Average	7	7	552	530	92	81	854	738
1983	Average	(a)	0	337	321	30	18	632	533
1984	Average	5	4	325	309	117	90	819	634
1985	Average	(a)	0	168	132	45	35	472	300
1986	Average	13	12	685	618	44	38	1,162	854
1987	Average	0	0	751	642	61	56	1,274	965
1988	January	3	0	849	733	61	37	1,652	1,228
	February	0	0	1,265	1,135	79	71	1,883	1,444
	March	0	0	937	796	6	0	1,509	1,162
	April	0	0	929	790	48	48	1,610	1,167
	May	0	0	1,041	870	41	41	1,724	1,277
	June	0	0	923	749	11	0	1,635	1,217
	July	0	0	1,076	800	43	35	1,911	1,433
	August	0	0	1,169	899	0	0	2,036	1,545
	September	0	0	1,066	922	22	22	2,042	1,649
	October	0	0	1,244	1,066	16	0	2,069	1,604
	November	0	0	986	850	0	0	1,914	1,477
	December	0	0	1,289	1,223	19	19	2,080	1,769
	Average	0	0	1,064	902	29	23	1,839	1,415
1989	January	0	0	1,449	1,335	59	59	2,219	1,863
	February	0	0	1,290	1,177	17	17	2,126	1,765
	March	0	0	1,108	1,025	64	64	1,805	1,490
	April	0	0	1,226	1,074	14	14	2,030	1,689
	May	0	0	1,155	1,056	61	61	1,977	1,617
	June	0	0	1,249	1,147	17	17	2,164	1,881
	July	0	0	1,182	1,096	0	0	2,308	1,982
	August	0	0	1,316	1,159	44	0	2,453	2,101
	September	26	26	1,109	1,021	20	0	2,195	1,874
	October	0	0	1,158	1,047	14	14	2,122	1,819
	November	0	0	1,342	1,230	0	0	2,257	1,891
	December	0	0	1,115	1,029	26	0	1,905	1,561
	Average	2	2	1,224	1,118	28	21	2,130	1,794
1990	January	0	0	1,214	1,055	37	0	2,605	2,060
	February	0	0	1,557	1,372	18	18	2,506	2,065
	March	0	0	1,157	1,060	17	17	2,161	1,805
	April	43	43	1,149	950	9	0	2,073	1,693
	May	0	0	1,225	1,076	73	60	2,349	1,963
	June	0	0	1,153	1,041	20	0	2,318	1,916
	July	0	0	1,369	1,242	13	13	2,853	2,478
	August	0	0	1,189	1,052	0	0	2,757	2,305
	September	0	0	1,286	1,168	0	0	1,915	1,588
	October	0	0	1,619	1,473	0	0	1,792	1,488
	November	0	0	1,581	1,431	0	0	1,758	1,477
	December	0	0	1,587	1,431	14	0	1,843	1,523
	Average	4	4	1,339	1,195	17	9	2,244	1,864

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Other-OPEC Sources							
		Ecuador		Gabon		Indonesia		Iran	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day							
1973	Average	48	47	0	0	213	200	223	216
1974	Average	42	42	23	23	300	284	499	483
1975	Average	57	57	27	27	390	379	280	278
1976	Average	51	51	28	26	539	537	298	298
1977	Average	57	55	42	35	541	507	535	530
1978	Average	54	38	41	38	573	533	555	554
1979	Average	42	30	42	42	420	380	304	297
1980	Average	27	17	26	25	348	314	9	8
1981	Average	48	38	35	35	366	318	0	0
1982	Average	42	32	40	40	248	226	35	35
1983	Average	61	56	59	59	338	315	48	48
1984	Average	55	47	58	57	343	304	10	10
1985	Average	67	56	52	51	314	292	27	27
1986	Average	77	64	26	25	318	297	19	19
1987	Average	29	23	35	35	285	262	98	98
1988	January	94	63	36	36	179	137	1	1
	February	21	14	12	12	194	154	0	0
	March	34	12	11	11	127	112	0	0
	April	61	49	33	33	166	165	0	0
	May	29	11	9	9	298	298	0	0
	June	42	24	46	46	184	184	0	0
	July	23	12	0	0	216	216	0	0
	August	42	36	18	18	153	153	0	0
	September	32	26	0	0	242	201	0	0
	October	59	47	10	0	265	204	0	0
	November	66	48	22	22	240	227	0	0
	December	64	58	0	0	194	181	0	0
	Average	47	33	16	15	205	186	(a)	(a)
1989	January	52	46	0	0	218	201	0	0
	February	74	67	11	11	292	244	0	0
	March	100	85	10	10	167	107	0	0
	April	116	111	72	72	128	97	0	0
	May	123	112	19	12	264	264	0	0
	June	75	75	88	88	138	129	0	0
	July	86	86	42	37	113	108	0	0
	August	97	79	87	87	115	100	0	0
	September	115	109	32	32	113	91	0	0
	October	122	105	50	50	167	130	0	0
	November	71	62	99	99	231	208	0	0
	December	41	23	85	85	263	222	0	0
	Average	89	80	50	49	183	158	0	0
1990	January	48	35	75	75	153	118	0	0
	February	60	40	43	43	254	189	0	0
	March	49	38	134	134	138	97	0	0
	April	31	29	32	28	88	80	0	0
	May	17	12	27	27	85	77	0	0
	June	98	86	59	59	138	129	0	0
	July	60	43	69	69	143	137	0	0
	August	81	69	119	119	69	55	0	0
	September	43	37	59	59	111	111	0	0
	October	49	43	50	50	88	88	0	0
	November	13	13	71	71	72	72	0	0
	December	35	12	30	30	45	36	0	0
	Average	49	38	64	64	114	98	0	0

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Other-OPEC Sources						Total OPEC ^a	
		Nigeria		Venezuela		Total Other OPEC			
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day							
1973	Average	459	448	1,135	344	2,078	1,257	2,993	2,095
1974	Average	713	697	979	319	2,527	1,827	3,280	2,540
1975	Average	762	746	702	395	2,219	1,882	3,601	3,211
1976	Average	1,025	1,014	700	241	2,642	2,167	5,066	4,545
1977	Average	1,143	1,130	690	250	3,008	2,507	6,193	5,643
1978	Average	919	910	646	181	2,788	2,254	5,751	5,184
1979	Average	1,080	1,069	690	293	2,579	2,110	5,637	5,112
1980	Average	857	841	481	156	1,749	1,361	4,300	3,864
1981	Average	620	611	406	147	1,478	1,149	3,323	2,922
1982	Average	514	510	412	155	1,291	998	2,148	1,734
1983	Average	302	301	422	164	1,231	944	1,862	1,477
1984	Average	216	207	548	253	1,230	878	2,049	1,512
1985	Average	293	280	605	306	1,358	1,012	1,830	1,312
1986	Average	440	437	793	416	1,674	1,259	2,837	2,113
1987	Average	535	529	804	488	1,787	1,435	3,060	2,400
1988	January	406	397	766	372	1,481	1,006	3,134	2,234
	February	506	473	846	411	1,578	1,063	3,461	2,507
	March	589	569	803	514	1,564	1,219	3,073	2,381
	April	711	706	833	455	1,803	1,408	3,413	2,575
	May	601	601	841	604	1,777	1,523	3,501	2,800
	June	875	866	850	567	1,997	1,687	3,632	2,904
	July	715	711	724	440	1,679	1,379	3,589	2,812
	August	623	610	830	421	1,666	1,238	3,703	2,784
	September	546	532	824	425	1,643	1,183	3,685	2,832
	October	686	664	772	387	1,792	1,301	3,861	2,905
	November	489	484	779	370	1,596	1,152	3,510	2,628
	December	667	667	669	305	1,594	1,211	3,674	2,980
	Average	618	607	794	439	1,681	1,281	3,520	2,696
1989	January	782	782	941	470	1,993	1,498	4,212	3,361
	February	567	559	775	368	1,719	1,249	3,845	3,015
	March	702	696	909	468	1,888	1,366	3,693	2,856
	April	750	722	831	424	1,897	1,426	3,927	3,115
	May	789	789	853	509	2,048	1,686	4,025	3,303
	June	864	841	778	486	1,943	1,619	4,106	3,500
	July	1,094	1,085	794	447	2,130	1,764	4,437	3,746
	August	946	932	834	486	2,078	1,683	4,531	3,784
	September	867	836	914	568	2,041	1,636	4,236	3,510
	October	713	694	1,004	592	2,056	1,571	4,177	3,390
	November	770	757	924	549	2,096	1,674	4,353	3,565
	December	915	886	903	561	2,206	1,777	4,111	3,338
	Average	815	800	873	495	2,010	1,582	4,140	3,376
1990	January	830	830	1,155	696	2,260	1,754	4,865	3,813
	February	833	816	898	564	2,088	1,652	4,594	3,717
	March	1,054	1,031	893	543	2,268	1,843	4,429	3,648
	April	969	941	1,005	692	2,125	1,772	4,198	3,465
	May	1,008	997	1,087	705	2,225	1,818	4,574	3,781
	June	778	760	1,070	704	2,142	1,737	4,460	3,653
	July	860	855	1,007	665	2,139	1,769	4,992	4,246
	August	881	881	1,014	617	2,164	1,741	4,921	4,046
	September	755	743	1,062	740	2,029	1,690	3,944	3,277
	October	557	536	982	717	1,725	1,434	3,517	2,921
	November	574	555	1,142	725	1,871	1,435	3,629	2,912
	December	499	461	975	616	1,585	1,155	3,428	2,678
	Average	800	784	1,025	686	2,052	1,650	4,296	3,514

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Non-OPEC Sources ^a											
		Angola		Australia		Bahama Islands		Brazil		Canada		Cuba People's Republic	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day											
1973	Average	49	49	2	0	174	0	9	0	1,325	1,001	(a)	0
1974	Average	49	48	1	0	164	0	2	0	1,070	791	0	0
1975	Average	75	71	5	0	152	0	5	0	848	600	0	0
1976	Average	12	7	2	0	118	0	0	0	599	371	0	0
1977	Average	24	17	3	0	171	0	0	0	517	279	0	0
1978	Average	20	6	5	0	160	0	0	0	467	248	0	0
1979	Average	43	39	6	0	147	0	1	0	538	271	13	13
1980	Average	42	37	1	0	78	0	3	1	455	199	(a)	0
1981	Average	49	45	5	0	74	0	23	14	447	164	18	0
1982	Average	44	42	5	(a)	65	0	47	19	482	214	40	8
1983	Average	78	71	4	0	125	0	41	2	547	274	34	8
1984	Average	90	85	38	25	88	0	60	(a)	630	341	48	15
1985	Average	110	104	37	21	40	0	61	0	770	468	59	38
1986	Average	112	102	41	30	37	0	50	0	807	570	90	68
1987	Average	192	180	58	49	37	0	84	0	848	608	82	63
1988	January	204	193	111	111	51	0	108	0	959	633	104	104
	February	162	149	77	75	79	0	106	0	1,033	679	121	111
	March	209	187	77	71	47	0	77	0	1,002	666	50	49
	April	194	194	36	28	26	0	114	0	985	703	94	87
	May	285	274	69	60	24	0	88	0	1,001	705	92	85
	June	158	148	64	64	15	0	107	0	1,032	744	94	85
	July	258	258	61	53	15	0	109	0	972	688	85	70
	August	214	214	66	66	12	0	105	0	1,009	708	64	64
	September	249	237	85	78	37	0	94	0	936	626	81	64
	October	256	254	28	28	13	0	127	0	996	654	120	120
	November	212	191	83	79	27	0	70	0	1,080	707	54	54
	December	134	134	7	0	40	0	74	0	990	655	96	96
	Average	212	203	64	59	32	0	98	0	999	681	88	82
1989	January	160	160	19	19	53	0	93	0	1,065	696	38	38
	February	249	237	32	27	24	0	131	0	1,007	639	32	26
	March	295	285	16	0	41	0	119	0	961	633	25	24
	April	256	256	43	41	55	0	76	0	877	599	97	83
	May	294	294	12	12	29	0	65	0	901	647	125	119
	June	256	245	31	31	28	0	92	0	921	673	66	60
	July	305	305	20	20	32	0	80	0	849	596	150	135
	August	317	306	39	30	19	0	67	0	911	616	68	67
	September	321	321	59	45	8	0	73	0	949	668	87	87
	October	335	335	58	53	44	0	66	0	857	590	85	84
	November	378	368	78	76	41	0	85	0	911	594	94	94
	December	238	238	23	16	29	0	39	0	973	613	90	90
	Average	284	279	36	31	34	0	82	0	931	630	80	78
1990	January	262	262	41	41	80	0	48	0	982	605	121	121
	February	346	346	58	55	78	0	45	0	946	585	53	51
	March	296	296	41	41	35	0	8	0	850	583	83	83
	April	281	281	25	20	51	0	40	0	925	617	80	74
	May	235	235	69	69	29	0	114	0	981	654	66	65
	June	260	260	44	44	36	0	82	0	942	699	49	43
	July	303	303	126	101	25	0	93	0	899	659	132	122
	August	134	134	56	33	40	0	45	0	952	676	79	77
	September	135	123	57	45	45	0	8	0	924	632	47	42
	October	139	139	31	31	9	0	12	0	917	636	85	85
	November	238	238	28	28	0	0	74	0	902	645	113	113
	December	224	224	64	60	13	0	16	0	987	713	47	47
	Average	237	236	53	47	37	0	49	0	934	643	80	77

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Non-OPEC Sources ^a									
		Colombia		Italy		Malaysia		Mexico		Netherlands	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day									
1973	Average	9	2	125	0	12	1	16	1	53	0
1974	Average	5	0	74	0	12	1	8	2	43	0
1975	Average	9	0	27	0	8	5	71	70	19	4
1976	Average	21	6	39	0	18	16	87	87	8	0
1977	Average	17	0	51	0	66	55	179	177	31	4
1978	Average	20	0	38	0	42	37	318	316	5	2
1979	Average	18	0	30	0	66	52	439	437	23	7
1980	Average	4	0	4	0	70	61	533	507	2	(a)
1981	Average	1	0	11	0	36	33	522	469	30	(a)
1982	Average	5	0	18	(a)	20	18	685	645	35	(a)
1983	Average	10	0	18	(a)	4	3	826	766	65	3
1984	Average	8	0	45	(a)	1	0	748	659	85	3
1985	Average	23	0	60	(a)	3	1	816	715	58	0
1986	Average	87	57	76	0	12	11	899	821	54	0
1987	Average	148	115	54	1	13	12	655	602	60	0
1988	January	168	137	111	9	31	27	808	729	96	0
	February	67	0	61	0	10	10	710	620	82	0
	March	203	160	111	20	0	0	745	709	66	0
	April	155	145	72	12	9	9	678	575	5	0
	May	135	119	53	0	0	0	722	662	49	0
	June	37	33	41	11	21	21	766	726	53	0
	July	105	74	49	0	20	20	723	655	105	0
	August	79	50	38	0	18	18	704	615	58	0
	September	151	125	51	0	11	9	843	746	11	0
	October	160	132	61	10	19	19	743	670	40	0
	November	145	113	61	0	76	76	811	723	77	0
	December	201	169	69	0	17	17	711	653	87	0
	Average	134	106	65	5	19	19	74	674	61	0
1989	January	261	204	19	0	62	62	809	748	57	0
	February	146	105	77	12	10	10	756	706	153	0
	March	185	146	59	0	15	15	667	621	30	0
	April	166	140	9	0	47	47	1,002	941	48	0
	May	122	68	26	10	22	22	808	764	31	0
	June	139	113	33	0	110	110	688	639	46	0
	July	108	71	1	0	16	16	758	708	34	0
	August	101	159	30	14	13	13	806	765	32	0
	September	163	146	22	0	10	10	721	659	54	0
	October	147	116	74	0	28	28	837	760	43	0
	November	227	188	42	0	97	97	743	715	33	0
	December	199	173	19	0	33	33	610	566	37	0
	Average	172	136	34	3	39	39	767	716	49	0
1990	January	188	146	124	0	14	14	776	691	129	0
	February	203	168	76	0	42	38	725	669	80	0
	March	177	146	47	0	28	28	815	757	21	0
	April	198	143	53	0	38	38	466	414	47	0
	May	220	175	101	10	0	0	788	688	63	0
	June	180	117	95	0	9	9	912	815	92	0
	July	169	111	56	11	20	20	703	651	54	0
	August	203	132	43	0	142	142	773	676	39	0
	September	97	84	38	0	105	105	871	807	20	0
	October	183	159	21	0	78	78	828	793	37	0
	November	209	177	32	0	8	8	761	706	49	0
	December	161	121	13	0	6	6	637	595	28	0
	Average	182	140	58	2	41	40	755	689	55	0

See footnotes at end of table.

Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Non-OPEC Sources ^a											
		Netherlands Antilles		Norway		Puerto Rico		Spain		Trinidad and Tobago		United Kingdom	
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil
		Thousand Barrels per Day											
1973	Average	585	0	1	0	99	0	26	0	255	60	15	0
1974	Average	511	0	1	1	90	0	12	0	251	63	8	0
1975	Average	332	0	17	12	90	0	1	0	242	115	14	(a)
1976	Average	275	0	36	35	88	0	1	0	274	104	31	13
1977	Average	211	0	50	48	105	0	10	0	289	134	128	97
1978	Average	229	0	104	104	94	0	3	0	253	142	180	169
1979	Average	231	0	75	75	92	0	4	0	190	123	202	197
1980	Average	225	0	144	144	88	0	1	0	176	115	178	173
1981	Average	197	0	119	114	62	0	1	(a)	133	102	375	369
1982	Average	175	0	102	102	50	0	3	(a)	112	92	458	441
1983	Average	189	0	66	65	40	0	2	(a)	96	83	382	365
1984	Average	188	0	114	112	42	0	11	0	94	87	402	378
1985	Average	40	0	32	31	28	0	29	1	113	98	310	278
1986	Average	25	0	60	53	21	0	53	0	125	93	350	317
1987	Average	29	0	80	70	21	0	55	0	106	75	352	304
1988	January	40	0	41	37	29	0	28	0	97	75	313	232
	February	21	0	63	54	16	0	47	0	93	63	334	261
	March	46	0	2	0	22	0	45	0	89	76	461	415
	April	43	0	65	65	29	0	93	0	82	72	594	556
	May	27	0	97	82	20	0	68	0	102	61	389	327
	June	31	0	1	0	13	0	57	0	112	80	232	200
	July	35	0	69	62	22	0	77	0	96	60	214	157
	August	32	0	82	79	23	0	97	0	97	79	111	53
	September	25	0	101	85	29	0	92	0	96	81	149	121
	October	17	0	143	143	21	0	42	0	98	61	447	392
	November	72	0	48	48	15	0	95	0	80	65	246	151
	December	40	0	90	81	28	0	75	0	125	83	294	182
	Average	36	0	67	62	22	0	68	0	97	71	315	254
1989	January	59	0	33	33	30	0	101	0	105	79	215	138
	February	44	0	233	222	24	0	70	0	92	85	221	130
	March	52	0	167	167	38	0	49	0	82	65	174	130
	April	14	0	186	175	24	0	56	0	117	99	148	88
	May	32	0	184	184	46	0	46	0	68	49	202	169
	June	34	0	179	179	32	0	99	0	143	100	181	132
	July	49	0	48	35	39	0	51	0	89	47	328	210
	August	43	0	117	98	21	0	69	0	101	79	370	316
	September	35	0	146	119	33	0	70	0	95	69	191	149
	October	38	0	166	143	32	0	38	0	71	71	309	234
	November	72	0	155	132	42	0	71	0	91	80	165	141
	December	29	0	57	50	24	0	83	0	81	63	78	71
	Average	42	0	138	127	32	0	67	0	94	73	215	160
1990	January	9	0	75	67	35	0	60	0	109	84	219	147
	February	27	0	43	37	32	0	53	0	89	67	74	23
	March	10	0	50	50	32	0	13	0	103	96	257	221
	April	40	0	134	118	33	0	17	0	114	81	304	288
	May	20	0	166	166	38	0	87	0	88	58	369	305
	June	21	0	209	199	27	0	66	0	118	83	249	233
	July	30	0	129	129	35	0	104	0	107	73	224	179
	August	41	0	159	159	29	0	54	0	108	91	183	179
	September	33	0	125	119	20	0	23	0	89	70	155	155
	October	43	0	67	67	29	0	21	0	83	76	81	44
	November	46	0	17	17	50	0	25	0	81	73	112	56
	December	53	0	43	17	29	0	38	0	62	62	33	19
	Average	31	0	102	96	32	0	47	0	96	76	189	155

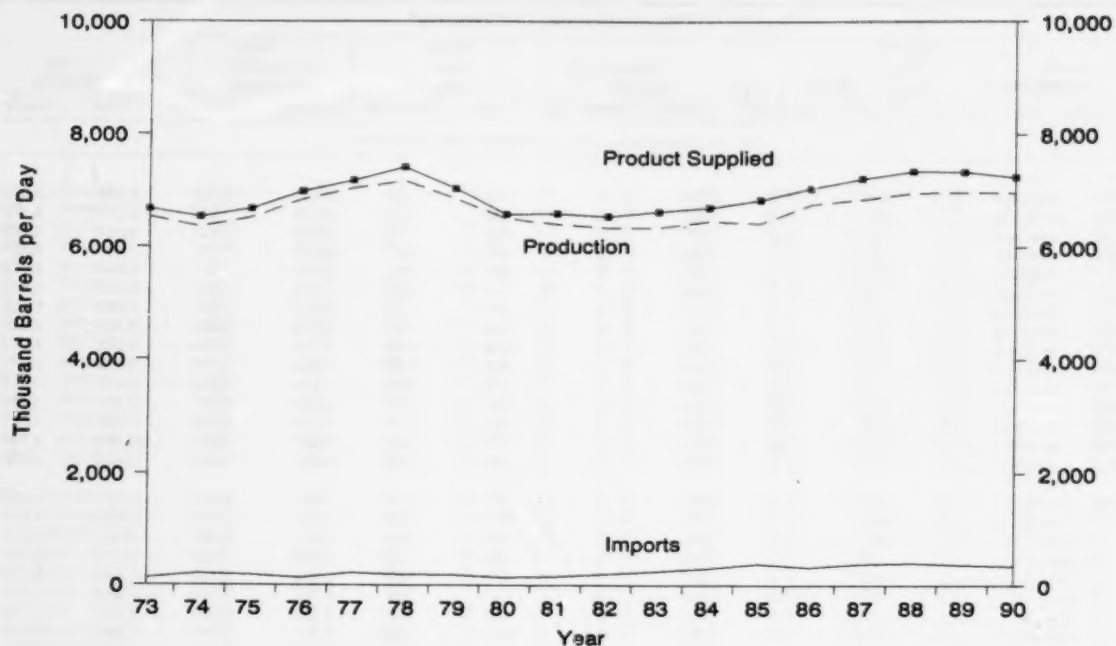
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Table S3. Crude Oil and Petroleum Product Imports, 1973 - Present (Continued)

Year/Month		Imports from Non-OPEC Sources ^a								Total Imports	
		U.S.S.R.		Virgin Islands		Other Non-OPEC		Total Non-OPEC			
		Total	Crude Oil	Total	Crude Oil	Total	Crude Oil	Total	Crude Oil		
		Thousand Barrels per Day									
1973	Average	28	0	329	0	153	36	3,263	1,149	6,256	3,244
1974	Average	20	0	391	0	122	30	2,832	937	6,112	3,477
1975	Average	14	0	406	0	120	14	2,454	893	6,056	4,105
1976	Average	11	2	422	0	203	101	2,247	742	7,313	5,287
1977	Average	12	2	466	0	287	157	2,614	971	8,807	6,615
1978	Average	8	1	428	0	239	146	2,612	1,172	8,363	6,356
1979	Average	1	0	431	0	269	192	2,819	1,407	8,456	6,519
1980	Average	1	0	388	0	219	162	2,609	1,399	6,909	5,263
1981	Average	5	(s)	327	0	236	163	2,672	1,474	5,996	4,396
1982	Average	1	0	316	0	306	174	2,968	1,754	5,113	3,488
1983	Average	1	(s)	282	0	378	215	3,189	1,853	5,051	3,329
1984	Average	13	(s)	294	0	411	210	3,388	1,914	5,437	3,426
1985	Average	8	(s)	247	0	394	137	3,237	1,888	5,067	3,201
1986	Average	18	(s)	244	0	426	144	3,387	2,065	6,224	4,178
1987	Average	11	0	272	0	459	196	3,617	2,274	6,678	4,674
1988	January	30	0	341	0	376	141	4,047	2,428	7,181	4,662
	February	45	0	200	0	466	122	3,794	2,143	7,256	4,650
	March	40	0	180	0	400	134	3,871	2,487	6,944	4,868
	April	0	0	193	0	389	145	3,857	2,593	7,270	5,167
	May	26	0	257	0	463	163	3,968	2,539	7,469	5,339
	June	15	0	212	0	547	306	3,607	2,418	7,239	5,322
	July	23	0	215	0	455	191	3,708	2,288	7,297	5,100
	August	23	0	172	0	679	359	3,683	2,306	7,386	5,089
	September	22	0	236	0	521	208	3,820	2,380	7,506	5,212
	October	19	0	234	0	384	164	3,969	2,646	7,830	5,551
	November	77	0	286	0	592	236	4,204	2,441	7,714	5,070
	December	25	0	372	0	578	179	4,053	2,250	7,727	5,230
	Average	29	0	242	0	487	196	3,882	2,411	7,402	5,107
1989	January	19	0	415	0	429	122	4,043	2,300	8,255	5,661
	February	12	0	369	0	505	92	4,186	2,290	8,032	5,305
	March	58	0	324	0	409	93	3,763	2,179	7,456	5,035
	April	49	0	407	0	473	165	4,151	2,635	8,078	5,750
	May	27	0	379	0	334	88	3,753	2,426	7,778	5,729
	June	79	0	363	0	351	195	3,871	2,476	7,977	5,976
	July	100	0	331	0	544	324	3,932	2,468	8,369	6,214
	August	43	0	239	0	533	319	4,029	2,781	8,560	6,565
	September	68	0	190	0	470	244	3,766	2,517	8,002	6,028
	October	66	0	180	0	651	383	4,124	2,796	8,301	6,187
	November	48	0	279	0	337	121	3,988	2,606	8,341	6,171
	December	0	0	377	0	449	213	3,468	2,126	7,579	5,463
	Average	48	0	321	0	457	197	3,921	2,467	8,061	5,843
1990	January	62	0	409	0	588	220	4,332	2,399	9,197	6,212
	February	40	0	323	0	471	139	3,805	2,177	8,399	5,895
	March	0	0	264	0	405	168	3,536	2,489	7,965	6,117
	April	20	0	283	0	513	275	3,660	2,348	7,858	5,813
	May	0	0	285	0	541	248	4,260	2,673	8,834	6,454
	June	19	0	299	0	579	270	4,287	2,771	8,747	6,423
	July	92	0	252	0	500	251	4,057	2,609	9,048	6,855
	August	73	0	230	0	340	107	3,722	2,406	8,644	6,452
	September	49	0	240	0	336	206	3,417	2,386	7,361	5,664
	October	87	10	204	0	245	92	3,199	2,210	6,717	5,132
	November	63	0	312	0	254	112	3,374	2,173	7,003	5,085
	December	34	0	291	0	233	70	3,011	1,933	6,439	4,611
	Average	45	1	282	0	417	180	3,721	2,381	8,018	5,894

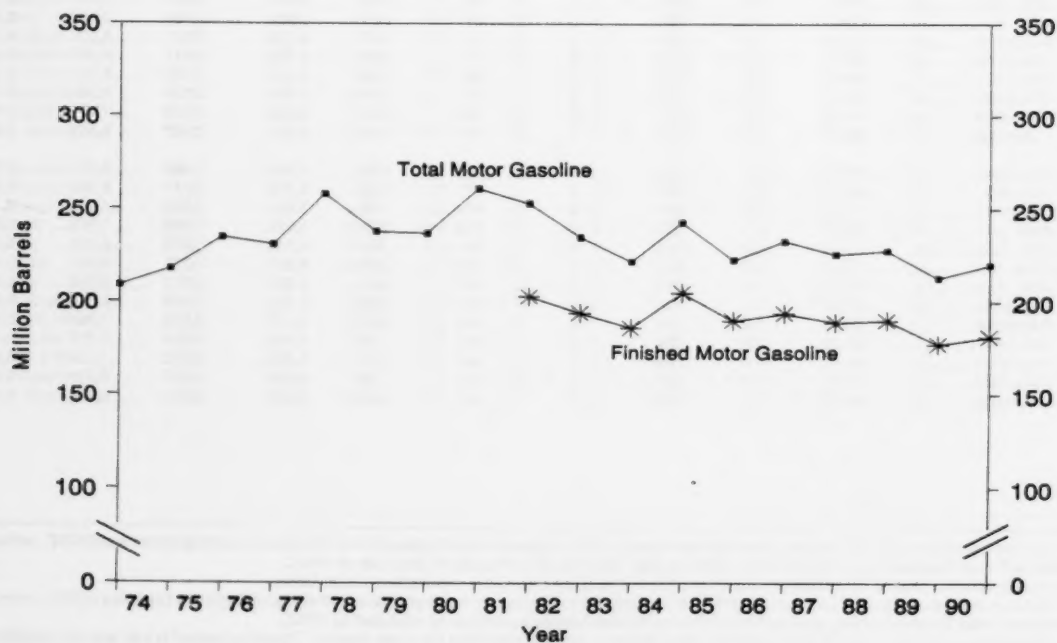
- ^a Includes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas as petroleum products that were refined from crude oil produced by OPEC.
- ^b Imports from the Neutral Zone between Kuwait and Saudi Arabia are included in imports from Saudi Arabia.
- ^c Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.
- ^d A small amount of Iranian crude oil entered the United States in January 1988 from the Virgin Islands. This oil originated in Iran and was exported to the Virgin Islands prior to the signing of Executive Order 12613 on October 29, 1987.
- (s) = Less than 500 barrels per day.
- Notes: * Beginning in October 1977, Strategic Petroleum Reserve imports are included. * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.
- Source: See Summary Statistics Table and Figure Sources.

Figure S5. Finished Motor Gasoline Supply and Disposition, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S4. See Summary Statistics Table and Figure Sources.

Figure S6. Motor Gasoline Ending Stocks, 1973 - Present



Note: Total motor gasoline includes motor gasoline blending components and finished motor gasoline.

Source: Energy Information Administration, *Petroleum Supply Annual*, Table S4. See Summary Statistics Table and Figure Sources.

Table S4. Finished Motor Gasoline Supply and Disposition, 1973 - Present

Year/Month		Supply		Disposition					Ending Stocks ^a	
		Total Production	Imports ^b	Stock Change ^{b,c}	Exports	Product Supplied			Total Motor Gasoline ^e	Finished Motor Gasoline
						Total ^d	Unleaded	Unleaded		
Thousand Barrels per Day								Percent of Total	Million Barrels	
1973	Average	6,535	134	-9	4	6,674	--	--	209	--
1974	Average	6,360	204	24	2	6,537	--	--	218	--
1975	Average	6,520	184	28	2	6,675	--	--	235	--
1976	Average	6,841	131	-10	3	6,978	--	--	231	--
1977	Average	7,033	217	72	2	7,177	1,976	27.5	258	--
1978	Average	7,169	190	-54	1	7,412	2,521	34.0	238	--
1979	Average	6,852	181	-2	(s)	7,034	2,798	39.8	237	--
1980	Average ^g	6,506	140	66	1	6,579	3,067	46.6	261	--
1981	Average	6,405	157	-28	2	6,588	3,264	49.5	253	--
1982	Average	6,338	197	-25	20	6,539	3,409	52.1	235	--
1983	Average	6,340	247	-45	10	6,622	3,647	55.1	222	186
1984	Average	6,453	299	54	6	6,693	3,987	59.6	243	205
1985	Average	6,419	381	-41	10	6,831	4,406	64.5	223	190
1986	Average	6,752	326	11	33	7,034	4,854	69.0	233	194
1987	Average	6,841	384	-15	35	7,206	5,470	75.9	226	189
1988	January	6,730	357	387	8	6,693	5,395	80.6	240	201
	February	6,736	397	75	18	7,039	5,607	79.7	241	203
	March	6,715	349	-277	18	7,323	5,894	80.5	232	194
	April	6,907	399	-142	18	7,430	5,991	80.6	227	190
	May	6,851	437	-43	28	7,303	5,861	80.3	226	189
	June	6,983	428	-465	59	7,817	6,336	81.1	210	175
	July	7,159	482	148	12	7,482	6,144	82.1	215	179
	August	7,209	494	131	15	7,556	6,232	82.5	220	184
	September	6,948	443	-28	16	7,404	6,115	82.6	221	183
	October	6,858	352	-75	13	7,271	5,988	82.4	218	180
	November	7,080	451	118	15	7,379	6,157	83.4	221	184
	December	7,303	277	192	45	7,344	6,220	84.7	228	190
	Average	6,956	405	3	22	7,336	5,995	81.7	--	--
1989	January	6,937	353	512	33	6,745	5,754	85.3	249	206
	February	6,650	423	-70	24	7,119	6,141	86.3	248	204
	March	6,612	381	-471	43	7,421	6,380	86.0	230	189
	April	6,811	370	-22	46	7,157	6,248	87.3	227	188
	May	6,894	355	-163	31	7,381	6,454	87.5	223	183
	June	7,275	386	-180	60	7,780	6,864	88.2	216	178
	July	7,360	383	390	57	7,296	6,509	89.2	229	190
	August	7,155	360	-260	58	7,717	6,934	89.8	221	182
	September	7,069	320	118	31	7,240	6,443	89.0	227	186
	October	6,845	389	-97	29	7,302	6,642	91.0	222	183
	November	7,046	406	81	18	7,353	6,756	91.9	224	185
	December	6,884	306	-257	37	7,410	6,927	93.5	213	177
	Average	6,963	369	-35	39	7,328	6,507	88.8	--	--
1990	January	6,879	417	621	31	6,643	6,246	94.0	236	196
	February	6,989	411	169	53	7,179	6,703	93.4	245	201
	March	6,613	270	-499	45	7,338	6,894	93.9	227	186
	April	6,775	328	-45	28	7,121	6,704	94.1	223	184
	May	6,610	585	-189	25	7,358	6,937	94.3	217	178
	June	7,101	376	-93	52	7,519	7,099	94.4	213	176
	July	7,238	432	133	41	7,496	7,090	94.6	218	180
	August	7,326	313	-233	77	7,796	7,383	94.7	210	172
	September	7,274	254	511	103	6,914	6,589	95.3	229	188
	October	6,880	192	-244	90	7,226	6,883	95.3	220	180
	November	6,940	259	-108	66	7,241	6,940	95.8	217	177
	December	6,887	264	119	53	6,978	6,713	96.2	220	181
	Average	6,959	342	10	55	7,235	6,850	94.7	--	--

^a Stocks are totals as of end of period.

^b Beginning in 1981, excludes blending components.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase.

^d Includes gasoline.

^e Includes motor gasoline blending components.

^f In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Summary Statistics Explanatory Note 2.

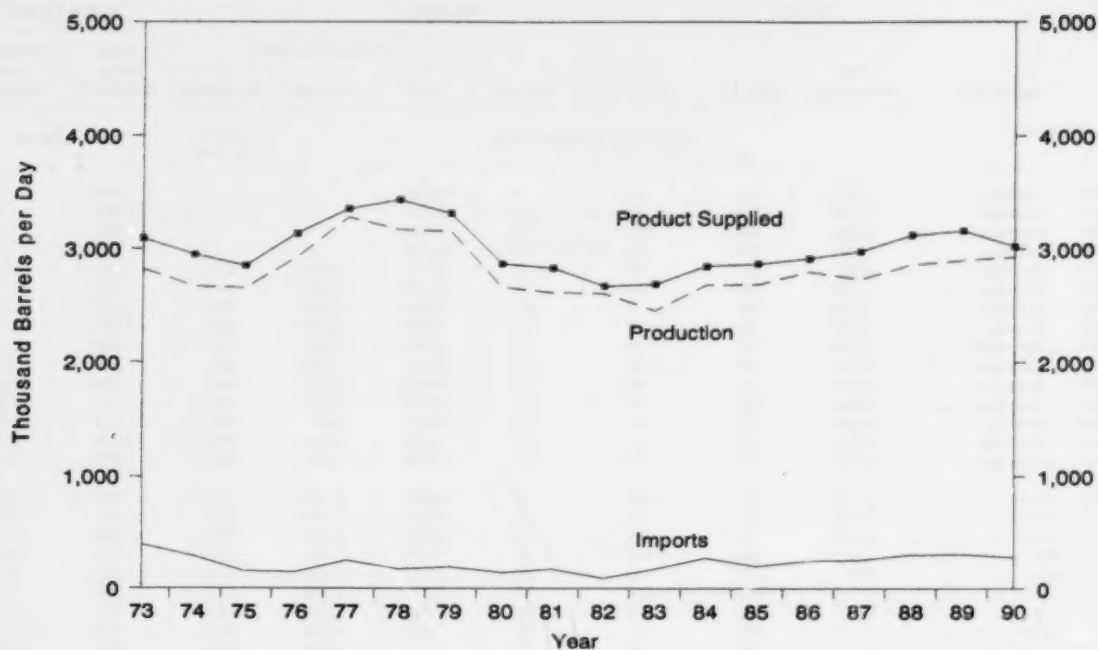
^g Beginning in January 1981, survey forms were modified. See Summary Statistics Explanatory Note 2.

(s) = Less than 500 barrels per day.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

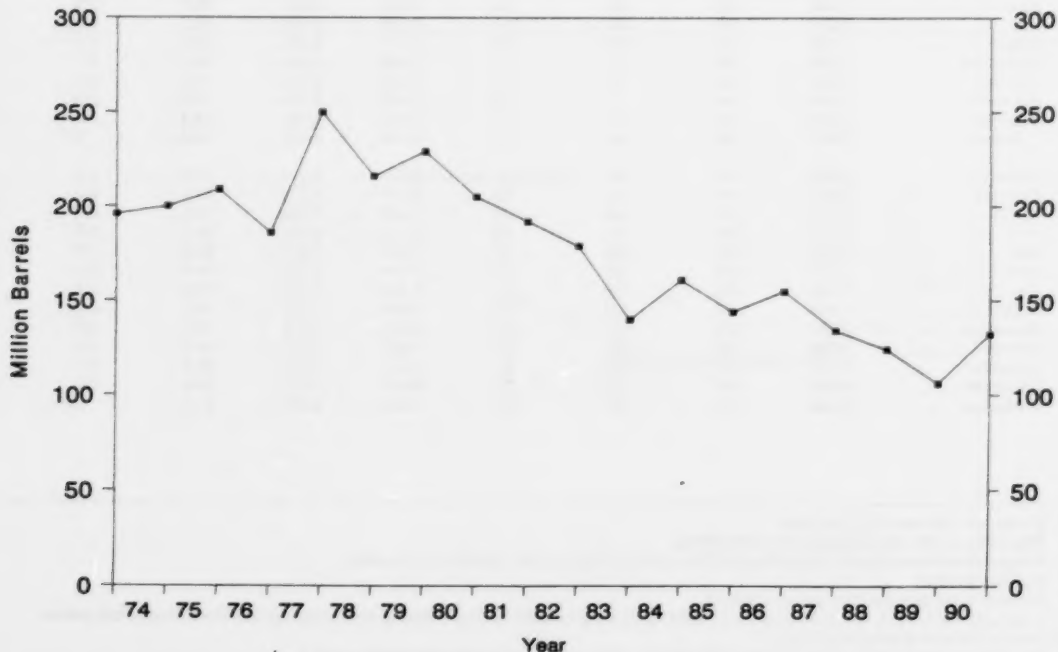
Source: See Summary Statistics Table and Figure Sources.

Figure S7. Distillate Fuel Oil Supply and Disposition, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S5. See Summary Statistics Table and Figure Sources.

Figure S8. Distillate Fuel Oil Ending Stocks, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S5. See Summary Statistics Table and Figure Sources.

Table S5. Distillate Fuel Oil Supply and Disposition, 1973 - Present

Year/Month		Supply			Disposition			Ending Stocks ^c
		Total Production	Imports	Crude Used Directly ^a	Stock Change ^b	Exports	Product Supplied ^a	
Thousand Barrels per Day								Million Barrels
1973	Average	2,822	392	2	115	9	3,092	196
1974	Average	2,669	289	2	9	2	2,948	^d 200
1975	Average	2,654	155	2	^d -40	1	2,851	209
1976	Average	2,924	146	1	-62	1	3,133	186
1977	Average	3,278	250	1	178	1	3,352	250
1978	Average	3,167	173	1	-93	3	3,432	216
1979	Average	3,153	193	1	34	3	3,311	229
1980	Average	2,662	142	1	-64	3	2,866	^d 205
1981	Average ^e	2,613	173	10	^d -38	5	2,829	192
1982	Average	2,606	93	10	-35	74	2,671	^d 179
1983	Average	2,456	174	-	^d -124	64	2,690	140
1984	Average	2,681	272	-	57	51	2,845	161
1985	Average	2,687	200	-	-48	67	2,868	144
1986	Average	2,798	247	-	31	100	2,914	155
1987	Average	2,731	255	-	-58	66	2,976	134
1988	January	3,010	424	-	-206	82	3,558	128
	February	2,667	383	-	-614	107	3,557	110
	March	2,706	247	-	-660	74	3,539	90
	April	2,867	210	-	171	42	2,864	95
	May	2,936	253	-	320	74	2,795	105
	June	2,893	222	-	185	76	2,854	110
	July	2,784	222	-	308	58	2,640	120
	August	2,848	279	-	185	70	2,873	126
	September	2,778	307	-	192	72	2,821	131
	October	2,827	336	-	-103	48	3,218	128
	November	2,909	327	-	19	34	3,183	129
	December	3,068	409	-	-171	87	3,560	124
	Average	2,859	302	-	-30	69	3,122	-
1989	January	2,974	346	-	-93	110	3,303	121
	February	2,797	331	-	-463	164	3,427	108
	March	2,713	439	-	-352	76	3,428	97
	April	2,789	301	-	60	56	2,975	99
	May	2,750	290	-	35	51	2,954	100
	June	2,809	233	-	(8)	39	3,002	100
	July	2,848	334	-	498	89	2,596	115
	August	2,907	254	-	41	154	2,966	116
	September	2,952	249	-	231	81	2,889	123
	October	2,906	261	-	-50	90	3,127	122
	November	3,063	307	-	-64	123	3,311	120
	December	3,266	324	-	-454	130	3,914	106
	Average	2,899	306	-	-49	97	3,157	-
1990	January	3,130	505	-	388	62	3,185	118
	February	2,753	357	-	-215	65	3,260	112
	March	2,657	281	-	-415	75	3,277	99
	April	2,803	308	-	9	59	3,043	99
	May	2,874	209	-	108	75	2,900	103
	June	2,996	257	-	246	84	2,923	110
	July	3,008	236	-	487	30	2,726	125
	August	3,131	293	-	156	51	3,218	130
	September	2,968	226	-	207	123	2,864	136
	October	2,928	190	-	8	150	2,960	136
	November	2,915	238	-	-129	188	3,094	132
	December	2,917	239	-	-7	347	2,816	132
	Average	2,925	278	-	73	109	3,021	-

^a Beginning in January 1983, product supplied for distillate fuel oil does not include crude oil used directly.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Summary Statistics Explanatory Note 2.

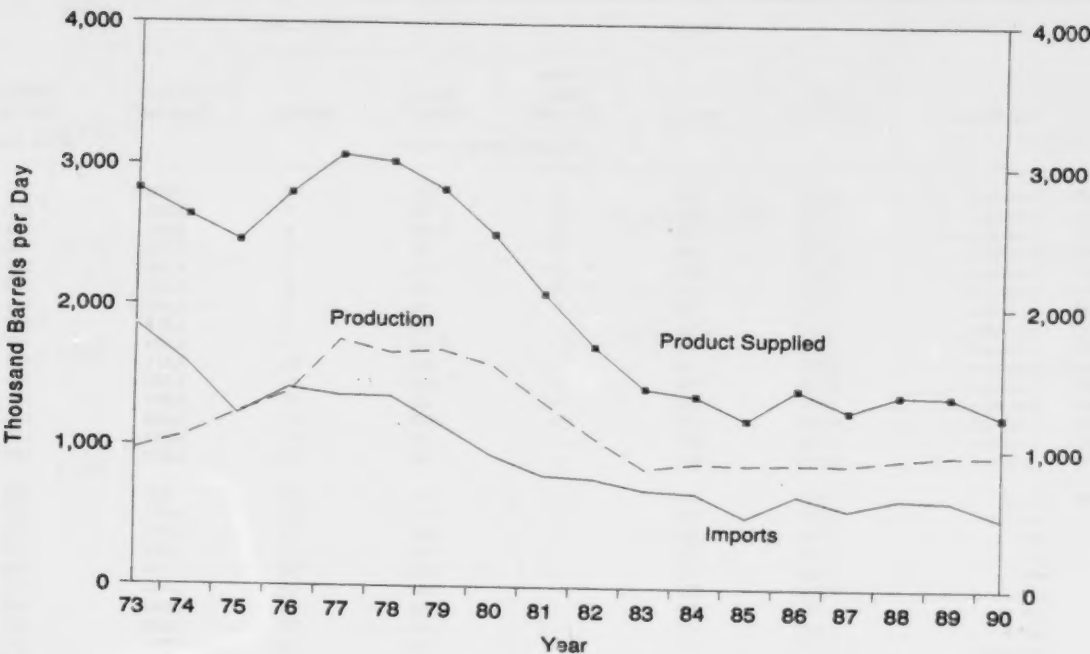
^e Beginning in January 1981, survey forms were modified. See Summary Statistics Explanatory Note 2.

(s) = Less than 500 barrels per day.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.

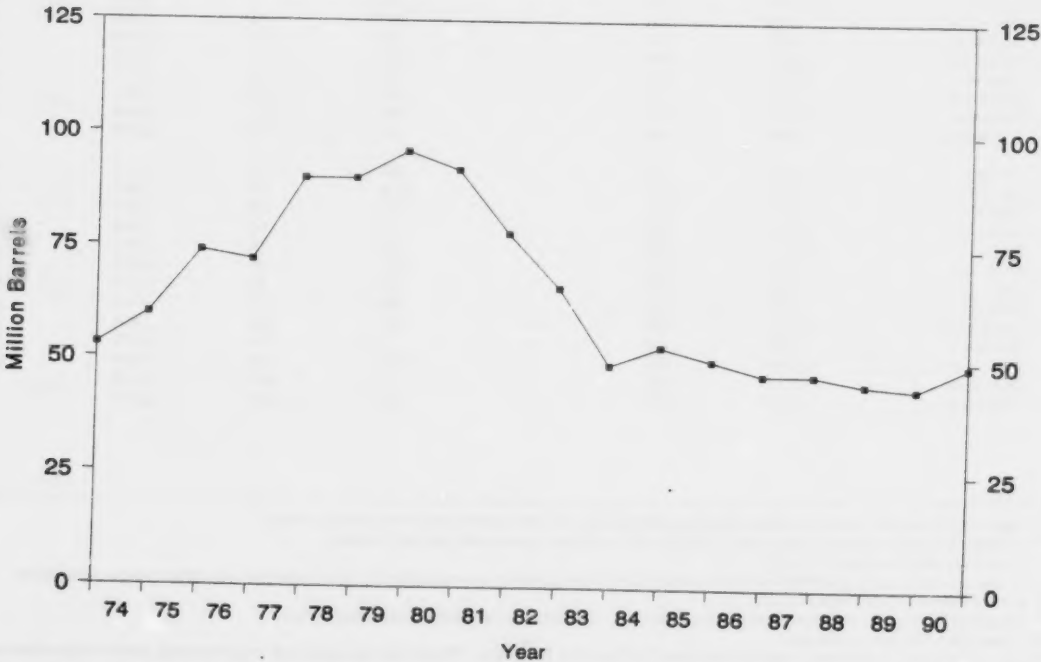
Source: See Summary Statistics Table and Figure Sources.

Figure S9. Residual Fuel Oil Supply and Disposition, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S6. See Summary Statistics Table and Figure Sources.

Figure S10. Residual Fuel Oil Ending Stocks, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S6. See Summary Statistics Table and Figure Sources.

Table S6. Residual Fuel Oil Supply and Disposition, 1973 - Present

Year/Month	Supply			Disposition			Ending Stocks ^c
	Total Production	Imports	Crude Used Directly ^a	Stock Change ^b	Exports	Product Supplied ^a	
Thousand Barrels per Day							Million Barrels
1973 Average	971	1,853	17	-5	23	2,822	53
1974 Average	1,070	1,587	13	17	14	2,639	d 60
1975 Average	1,235	1,223	15	d -2	15	2,462	74
1976 Average	1,377	1,413	17	-5	12	2,801	72
1977 Average	1,754	1,359	13	48	6	3,071	90
1978 Average	1,667	1,355	13	1	13	3,023	90
1979 Average	1,687	1,151	12	15	9	2,826	96
1980 Average	1,580	939	12	-10	33	2,508	d 92
1981 Average ^e	1,321	800	48	d -37	118	2,088	78
1982 Average	1,070	776	48	-32	209	1,716	d 66
1983 Average	852	699	-	d -55	185	1,421	49
1984 Average	891	681	-	12	190	1,369	53
1985 Average	882	510	-	-7	197	1,202	50
1986 Average	889	669	-	-8	147	1,418	47
1987 Average	885	585	-	(s)	186	1,264	47
1988 January	1,002	805	-	-44	190	1,661	48
February	994	901	-	-33	229	1,698	45
March	948	650	-	-43	165	1,476	44
April	960	495	-	-33	170	1,318	43
May	862	432	-	94	263	938	46
June	880	336	-	-117	249	1,083	42
July	906	479	-	-37	206	1,217	41
August	866	581	-	-97	225	1,320	38
September	852	698	-	220	100	1,230	45
October	852	603	-	-68	181	1,343	42
November	916	785	-	51	146	1,504	44
December	1,069	975	-	20	271	1,754	45
Average	926	644	-	-8	200	1,378	-
1989 January	949	909	-	84	151	1,623	47
February	930	877	-	-58	146	1,719	46
March	937	706	-	-128	220	1,551	42
April	904	681	-	-52	236	1,401	40
May	934	538	-	77	276	1,119	42
June	953	533	-	54	208	1,223	44
July	862	556	-	-44	176	1,286	43
August	903	501	-	58	225	1,121	45
September	856	454	-	162	137	1,010	49
October	1,001	583	-	50	243	1,292	51
November	1,075	543	-	48	330	1,240	52
December	1,140	680	-	-275	226	1,870	44
Average	954	629	-	-2	215	1,370	-
1990 January	1,163	825	-	205	186	1,597	50
February	1,060	663	-	36	214	1,474	51
March	976	335	-	-158	277	1,192	46
April	882	559	-	90	200	1,151	49
May	884	507	-	22	141	1,227	50
June	926	485	-	-98	207	1,302	47
July	987	536	-	72	171	1,280	49
August	944	574	-	-1	280	1,238	49
September	909	313	-	15	200	1,007	49
October	799	383	-	-3	160	1,026	49
November	846	387	-	25	243	965	50
December	1,021	484	-	-50	259	1,296	49
Average	950	504	-	13	211	1,229	-

^a Beginning in January 1983, product supplied for residual fuel oil does not include crude oil used directly.
^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

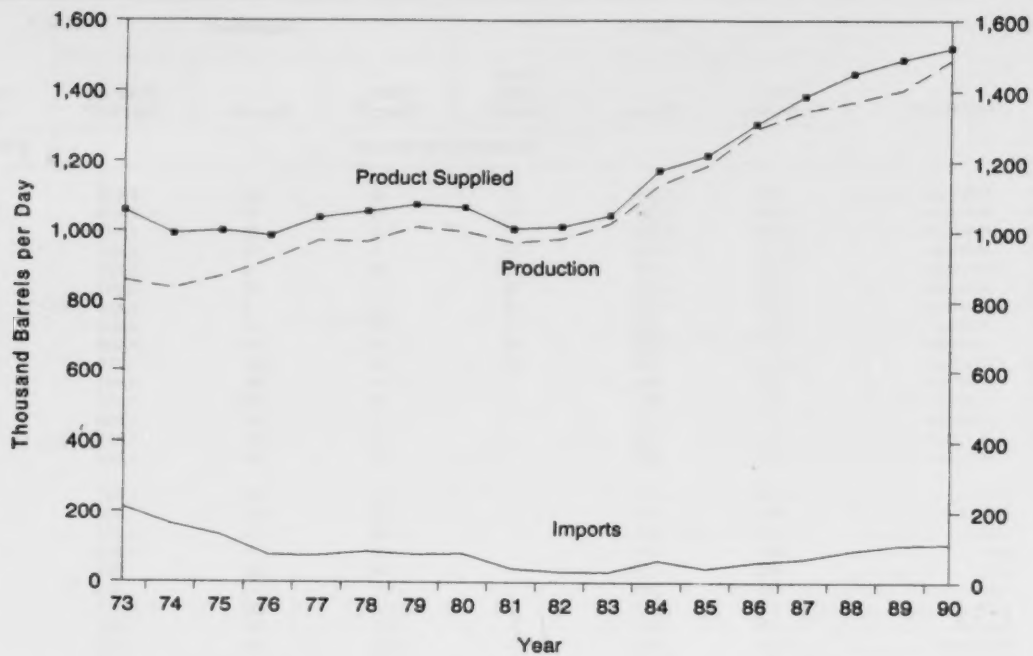
^c Stocks are totals as of end of period.

^d In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Summary Statistics Explanatory Note 2.

^e Beginning in January 1981, survey forms were modified. See Summary Statistics Explanatory Note 2.
 (s) = Less than 500 barrels per day.

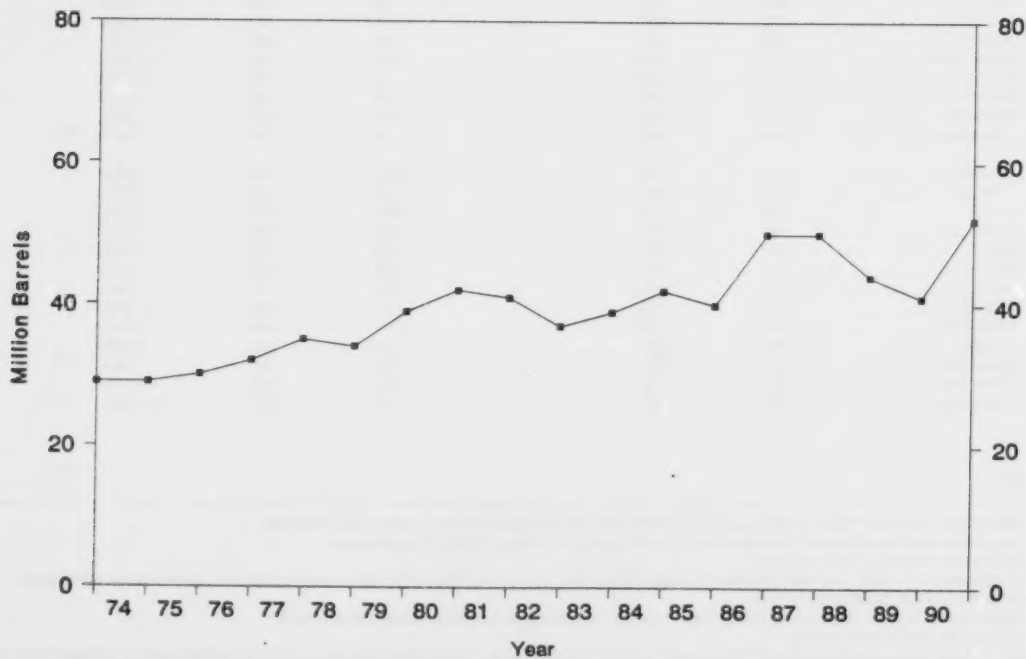
Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.
 Source: See Summary Statistics Table and Figure Sources.

Figure S11. Jet Fuel Supply and Disposition, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S7. See Summary Statistics Table and Figure Sources.

Figure S12. Jet Fuel Ending Stocks, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S7. See Summary Statistics Table and Figure Sources.

Table S7. Jet Fuel Supply and Disposition, 1973 - Present

Year/Month		Supply			Disposition				Ending Stocks ^a	
		Production		Imports	Stock Change ^b	Exports	Product Supplied		Total	Kerosene Type
							Total	Kerosene-Type		
		Thousand Barrels per Day	Million Barrels							
1973	Average	859	679	212	8	4	1,059	842	29	23
1974	Average	836	641	183	2	3	993	771	^b 29	^b 24
1975	Average	871	691	133	^b 2	2	1,001	791	30	25
1976	Average	918	731	76	5	2	987	789	32	26
1977	Average	973	787	75	7	2	1,039	831	35	28
1978	Average	970	791	86	-2	1	1,057	858	34	28
1979	Average	1,012	835	78	13	1	1,076	876	39	33
1980	Average	999	811	80	10	1	1,068	851	^b 42	^b 36
1981	Average	968	775	38	^b -4	2	1,007	809	41	34
1982	Average	978	778	29	-12	6	1,013	804	^b 37	^b 31
1983	Average	1,022	817	29	^b (s)	6	1,046	839	^b 39	^b 32
1984	Average	1,132	919	62	9	9	1,175	953	42	35
1985	Average	1,189	983	39	-4	13	1,218	1,005	40	34
1986	Average	1,293	1,097	57	25	18	1,307	1,105	50	43
1987	Average	1,343	1,138	67	(s)	24	1,385	1,181	50	42
1988	January	1,415	1,231	85	-141	82	1,580	1,360	46	38
	February	1,383	1,205	70	-94	34	1,513	1,281	43	37
	March	1,453	1,242	97	108	52	1,390	1,195	46	40
	April	1,291	1,088	84	-29	13	1,391	1,173	45	39
	May	1,288	1,059	112	25	7	1,368	1,157	46	39
	June	1,342	1,133	78	-17	15	1,421	1,206	46	39
	July	1,363	1,154	88	43	3	1,404	1,193	47	40
	August	1,345	1,138	103	-8	15	1,441	1,237	47	40
	September	1,375	1,177	61	-3	16	1,423	1,216	47	40
	October	1,366	1,158	146	16	4	1,491	1,277	47	41
	November	1,337	1,118	79	-32	9	1,439	1,221	46	40
	December	1,476	1,259	74	-75	82	1,543	1,314	44	38
	Average	1,370	1,164	90	-17	28	1,449	1,236	-	-
1989	January	1,503	1,312	101	21	75	1,508	1,334	44	38
	February	1,404	1,214	120	-40	21	1,542	1,342	43	37
	March	1,396	1,188	101	-2	11	1,488	1,277	43	37
	April	1,270	1,074	127	31	16	1,351	1,150	44	38
	May	1,249	1,031	120	40	1	1,328	1,103	45	39
	June	1,350	1,139	124	-27	1	1,500	1,286	45	38
	July	1,410	1,194	113	90	11	1,422	1,219	47	41
	August	1,437	1,237	90	28	15	1,484	1,260	48	42
	September	1,442	1,218	95	-13	34	1,516	1,316	48	41
	October	1,504	1,300	74	74	30	1,474	1,252	50	44
	November	1,514	1,305	91	34	52	1,519	1,337	51	44
	December	1,354	1,149	115	-335	59	1,745	1,541	41	34
	Average	1,403	1,197	106	-8	27	1,489	1,284	-	-
1990	January	1,527	1,340	163	76	30	1,584	1,404	43	37
	February	1,530	1,330	158	120	50	1,519	1,316	47	40
	March	1,457	1,256	120	92	30	1,455	1,289	49	42
	April	1,357	1,179	103	-91	19	1,531	1,335	47	40
	May	1,392	1,194	119	8	8	1,495	1,313	47	40
	June	1,388	1,214	125	13	10	1,490	1,320	47	40
	July	1,434	1,307	99	117	10	1,406	1,259	51	45
	August	1,424	1,250	83	-82	37	1,552	1,363	48	43
	September	1,548	1,339	81	48	47	1,534	1,329	50	44
	October	1,630	1,463	71	39	77	1,585	1,406	51	45
	November	1,606	1,445	93	-19	141	1,578	1,369	50	45
	December	1,570	1,411	82	51	60	1,541	1,378	52	46
	Average	1,488	1,311	108	31	43	1,522	1,340	-	-

^a Stocks are totals as of end of period.^b A negative number indicates a decrease in stocks and a positive number indicates an increase.^c In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock change calculations.

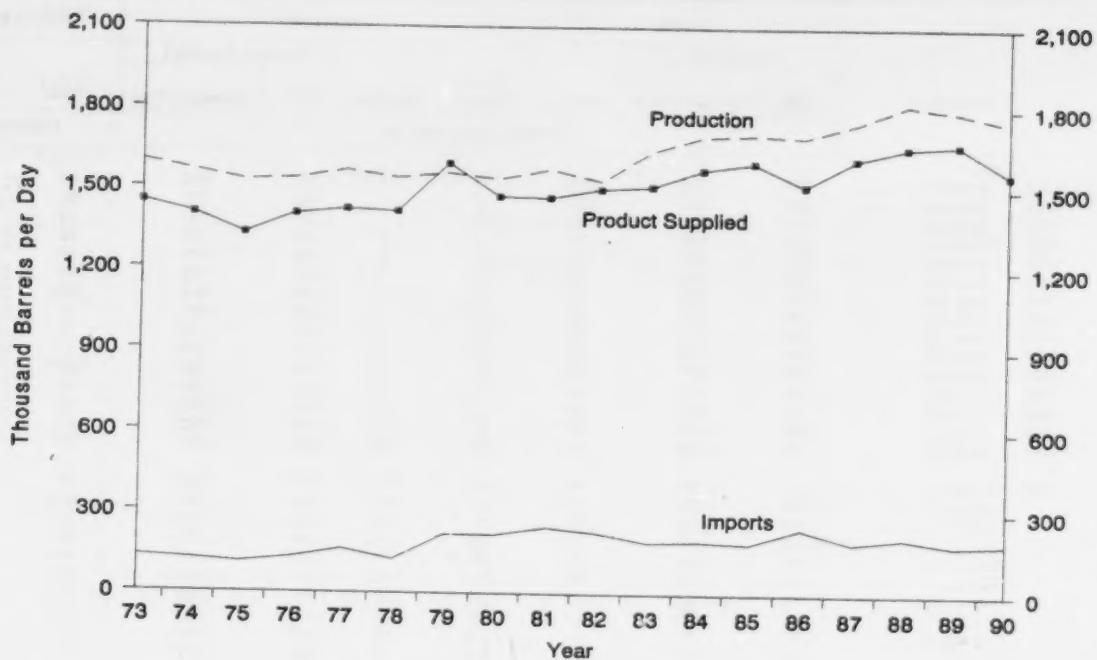
See Summary Statistics Explanatory Note 2.

(s) = Less than 500 barrels per day.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.

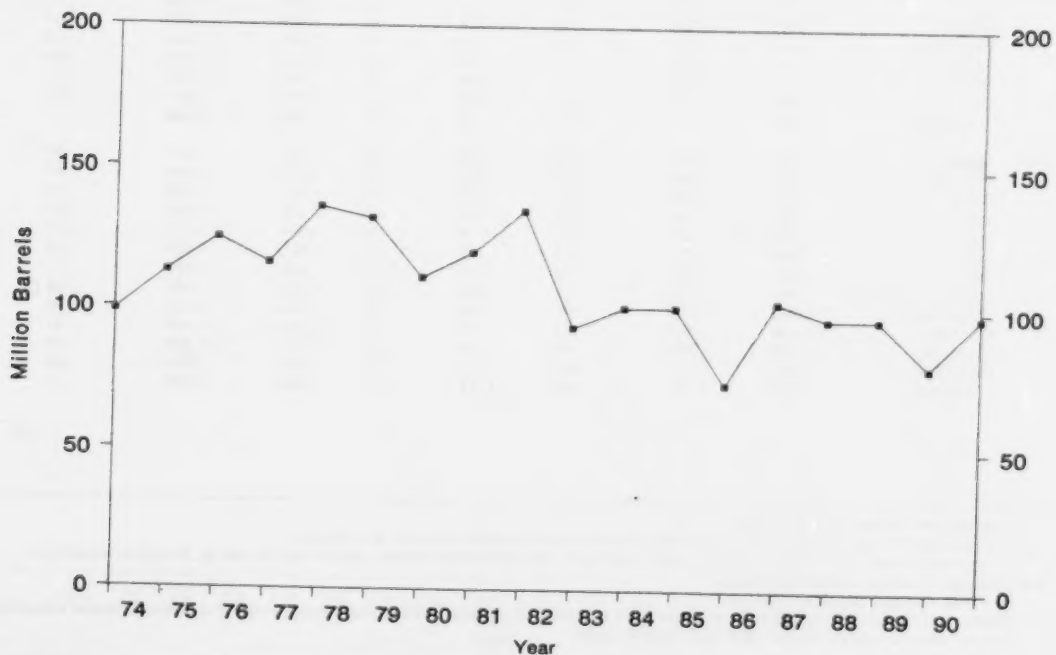
Source: See Summary Statistics Table and Figure Sources.

Figure S13. Liquefied Petroleum Gases Supply and Disposition, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S8. See Summary Statistics Table and Figure Sources.

Figure S14. Liquefied Petroleum Gases Ending Stocks, 1973 - Present



Source: Energy Information Administration, *Petroleum Supply Annual*, Table S8. See Summary Statistics Table and Figure Sources.

Table S8. Liquefied Petroleum Gases^a Supply and Disposition, 1973 - Present

Year/Month		Supply		Disposition				Ending Stocks ^c
		Total Production	Imports	Stock Change ^b	Refinery Inputs	Exports	Product Supplied	
Thousand Barrels per Day								Million Barrels
1973	Average	1,600	132	35	220	27	1,449	99
1974	Average	1,565	123	38	220	25	1,406	^d 113
1975	Average	1,527	112	^d 35	246	26	1,333	125
1976	Average	1,535	130	-24	260	25	1,404	116
1977	Average	1,566	161	55	233	18	1,422	136
1978	Average	1,537	123	-12	239	20	1,413	132
1979	Average	1,556	217	-70	236	15	1,592	111
1980	Average	1,535	216	27	233	21	1,489	^d 120
1981	Average	1,571	244	^d 18	289	42	1,466	135
1982	Average	1,528	226	-111	300	65	1,499	^d 94
1983	Average	1,642	190	^d -4	253	73	1,509	^d 101
1984	Average	1,697	195	^d -19	291	48	1,572	101
1985	Average	1,704	187	-75	304	62	1,599	74
1986	Average	1,695	242	80	302	42	1,512	103
1987	Average	1,748	190	-15	304	38	1,612	97
1988	January	1,734	226	-566	383	44	2,099	80
	February	1,770	245	-328	366	47	1,929	70
	March	1,619	165	-50	292	36	1,707	68
	April	1,806	205	361	277	43	1,329	79
	May	1,817	165	343	277	37	1,324	90
	June	1,814	144	331	256	38	1,333	100
	August	1,842	233	380	248	35	1,412	112
	September	1,847	241	287	262	50	1,490	121
	October	1,841	194	20	274	43	1,698	121
	November	1,872	216	-47	318	56	1,761	120
	December	1,835	258	-206	445	71	1,782	114
	Average	1,811	222	-522	461	85	2,010	97
		1,817	209	1	321	49	1,656	--
1989	January	1,885	239	-335	422	19	2,018	87
	February	1,798	260	-333	328	31	2,032	78
	March	1,909	150	-85	274	43	1,827	75
	April	1,950	121	294	242	27	1,507	84
	May	1,943	110	428	226	43	1,357	97
	June	1,824	155	269	254	35	1,422	105
	July	1,850	192	407	247	45	1,343	118
	August	1,787	202	272	245	40	1,433	126
	September	1,737	182	-46	303	31	1,631	125
	October	1,679	176	-313	371	31	1,766	115
	November	1,643	179	-389	446	33	1,732	103
	December	1,483	205	-749	424	37	1,975	80
	Average	1,791	181	-47	315	35	1,668	--
1990	January	1,684	261	-92	414	44	1,580	77
	February	1,743	235	11	339	42	1,587	78
	March	1,763	155	80	199	44	1,595	80
	April	1,751	150	91	195	25	1,589	83
	May	1,761	204	287	209	36	1,433	92
	June	1,719	202	469	212	28	1,211	106
	July	1,756	157	268	217	36	1,392	114
	August	1,825	256	339	236	43	1,463	125
	September	1,789	149	37	293	41	1,567	126
	October	1,773	159	-243	348	38	1,790	118
	November	1,731	140	-296	427	39	1,702	109
	December	1,692	184	-370	427	58	1,782	98
	Average	1,749	188	48	293	40	1,556	--

^a Includes ethane, propane, normal butane, and isobutane. Beginning in January 1984, unfractionated stream is reported by individual product.
^b A negative number indicates a decrease in stocks and a positive number indicates an increase.
^c Stocks are totals as of end of period.
^d In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock change calculations.

See Summary Statistics Explanatory Note 2.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.
Source: See Summary Statistics Table and Figure Sources.

Table S9. Other Petroleum Products^a Supply and Disposition, 1973 - Present

Year/Month		Supply		Disposition				Ending Stocks ^c
		Total Production	Imports	Stock Change ^b	Refinery Inputs	Exports	Product Supplied	
		Million Barrels						
1973	Average	2,833	290	1	750	162	2,211	179
1974	Average	2,722	269	25	665	172	2,129	^b 188
1975	Average	2,547	144	^c -6	537	158	2,001	188
1976	Average	2,725	129	(s)	524	172	2,158	188
1977	Average	2,939	130	20	514	164	2,371	195
1978	Average	3,076	80	-12	492	165	2,511	191
1979	Average	3,141	116	24	352	208	2,673	200
1980	Average	2,957	130	15	310	197	2,566	^b 205
1981	Average	2,771	188	^b -42	723	197	2,081	241
1982	Average	2,475	305	-68	787	205	1,856	^b 216
1983	Average	2,437	382	^b -6	712	236	1,877	^b 217
1984	Average	2,500	503	^b -32	791	236	2,007	198
1985	Average	2,532	550	22	888	227	1,947	206
1986	Average	2,704	504	-15	888	291	2,045	201
1987	Average	2,737	543	-1	829	264	2,187	200
1988	January	2,527	622	277	812	272	1,787	209
	February	2,523	610	125	753	284	1,971	212
	March	2,694	569	174	687	275	2,125	218
	April	2,719	710	116	851	275	2,187	221
	May	2,783	731	310	501	268	2,435	231
	June	2,923	709	-26	777	364	2,518	230
	July	2,952	693	-22	831	325	2,511	229
	August	3,068	598	-190	796	287	2,774	223
	September	2,870	590	-156	850	307	2,459	219
	October	2,797	625	-57	762	264	2,453	217
	November	2,731	744	75	818	294	2,289	219
	December	2,679	539	-354	1,153	310	2,109	208
	Average	2,773	645	22	799	294	2,303	--
1989	January	2,696	646	375	706	236	2,024	220
	February	2,553	717	231	726	281	2,032	226
	March	2,671	644	114	660	311	2,230	230
	April	2,683	727	102	808	290	2,210	233
	May	2,882	635	181	688	258	2,391	239
	June	3,025	571	-179	838	388	2,549	233
	July	3,044	576	-159	955	333	2,491	228
	August	2,998	587	-244	893	313	2,623	221
	September	2,986	675	125	737	309	2,490	224
	October	2,687	632	-42	730	308	2,323	223
	November	2,608	645	-77	900	299	2,131	221
	December	2,409	486	-266	918	332	1,910	213
	Average	2,771	627	12	797	305	2,285	--
1990	January	2,567	814	86	735	225	2,335	215
	February	2,781	680	387	654	298	2,122	226
	March	2,670	687	78	795	276	2,207	229
	April	2,774	596	-138	869	318	2,320	224
	May	2,847	756	295	544	292	2,471	234
	June	2,907	879	-160	919	334	2,692	229
	July	3,146	732	-148	958	317	2,752	224
	August	3,097	673	-291	998	297	2,766	215
	September	3,029	674	68	757	265	2,611	217
	October	2,848	590	-436	1,211	329	2,334	204
	November	2,788	800	206	1,010	270	2,102	210
	December	2,644	575	^c 38	1,172	249	2,087	201
	Average	2,842	705	-32	887	289	2,402	--

^a Includes pentanes plus, other hydrocarbons and alcohol, unfinished oils, gasoline blending components and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, jet fuel, and liquefied petroleum gases.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock change calculations. See Summary Statistics Explanatory Note 2.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding. Source: See Summary Statistics Table and Figure Sources.

Summary Statistics Table and Figure Sources

Information about petroleum supply and disposition at the National level are presented in the Summary Statistics tables. Industry terminology and product definitions are listed alphabetically in the Glossary.

The data presented in these tables are from several sources and represent different levels of timeliness and data finality.

- U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys, Petroleum Statement, Annual and PAD Districts Supply/Demand, Annual* (1973 through 1976).
- U.S. Department of Energy, Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual and PAD Districts Supply/Demand,*

Annual, and unleaded gasoline data from *Monthly Petroleum Statistics Report* (1977 through 1980).

- EIA, *Petroleum Supply Annual* (1981 through 1990).
- Data on crude oil production are reported to the EIA by State government agencies. Data on crude oil production for Federal offshore areas are reported to the EIA by the Minerals Management Service of the U.S. Department of the Interior and the Conservation Committee of California Oil Producers. Crude oil production data for 1990 reflects data received as of April 1991. Data for 1990 received after April will be published as an appendix in the following year's *Petroleum Supply Annual*.

Summary Statistics Explanatory Notes

The following notes are provided to assist in understanding and interpreting the data.

Note 1. Domestic Crude Oil Production

The Energy Information Administration (EIA) collects monthly crude oil production data on an ongoing basis. Data on crude oil production for States are reported to the EIA by State government agencies. Data on crude oil production for Federal offshore areas are reported to the EIA by the Minerals Management Service of the U.S. Department of the Interior and the Conservation Committee of California Oil Producers.

Currently, all except four crude oil producing States (Michigan, New York, Ohio, and Pennsylvania) report production on a monthly basis. These four States report crude oil on an annual basis. The EIA incorporates production data into its Crude Oil Production System (COPS) as the data are received from the reporting agencies. EIA publications show portions of this database at specific points in time. Table 14 of this publication presents the 1990 crude oil production data received by the EIA as of April 1991. Crude oil production data for 1990 received after April 1991 will be published later as an appendix in the following year's *Petroleum Supply Annual* (PSA). Table C1 of this publication presents the 1989 crude oil production a year after it was published in the PSA 1989.

Note 2. Frames Maintenance

In January 1975, 1981, 1983, and 1984, numerous respondents were added to bulk terminal and pipeline surveys affecting subsequent stocks reported and stock change calculations. Using the expanded coverage (new basis), the end-of-year stocks, in million barrels, would have been as listed below.

- Crude Oil: 1980-488 (Total) and 380 (Other Primary); 1982-645 (Total) and 351 (Other Primary).
- Crude Oil and Petroleum Products: 1974-1,121; 1980-1,425; and 1982-1,461.
- Motor Gasoline: 1974-225 (Total); 1980-263 (Total) and 214 (Finished); 1982-244 (Total) and 202 (Finished).
- Distillate Fuel Oil: 1974-224; 1980-205; and 1982-186.
- Residual Fuel Oil: 1974-75; 1980-91; and 1982-69.
- Jet Fuel: 1974-30 (Total) and 24 (Kerosene-type); 1980-42 (Total) and 36 (Kerosene-type); and 1982-39 (Total) and 32 (Kerosene-type).
- Liquefied Petroleum Gases: 1974-113; 1980-128; 1982-102; and 1983-108.
- Other Petroleum Products: 1974-190; 1980-207; 1982-219; and 1983-210.
- Stock change calculations beginning in 1975, 1981, and 1983 were made using new basis stock levels.

Stocks of Alaskan crude oil in-transit were included for the first time in January 1981. The major impact of this change is on the reporting of stock change calculations. Using the expanded coverage (new basis), 1980 end-of-year crude oil stocks would have been 488 million barrels for Total and 380 million barrels for Other Primary.

Beginning with January 1984, natural gas liquids supply and disposition data were collected on a component basis rather than a product basis. This change affected stocks reported and stock change calculations. Under the new basis, end-of-year 1983 stocks would have been 108 million barrels for Liquefied Petroleum Gases and 248 million barrels for Other Petroleum Products.

Detailed Statistics



At some locations, oil skimmers and knockout tanks (in background) are used to remove waste water from the crude oil. The crude oil is then put into storage tanks and gauged.

Summary of Studies on the Development of the Believed Folklore

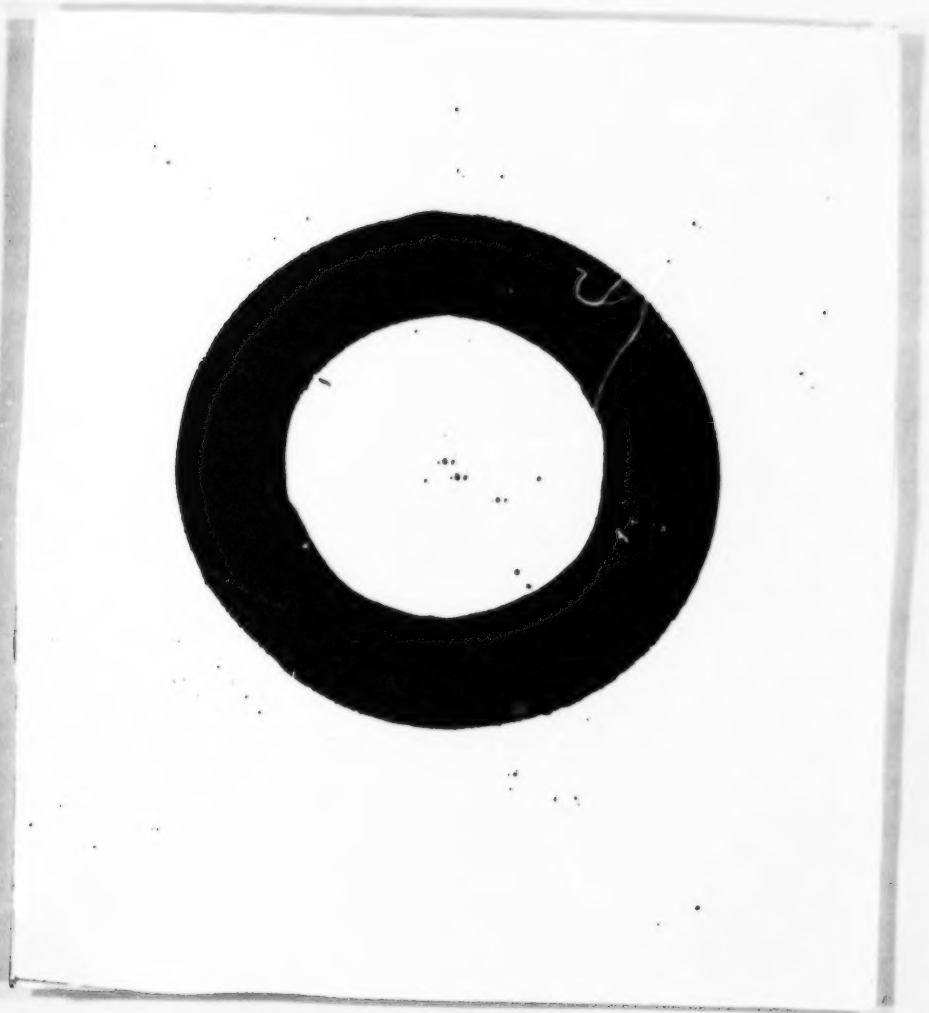


Table 1. U.S. Petroleum Balance, 1990

Commodity		Thousand Barrels	Thousand Barrels per Day
Crude Oil			
Field Production			
(1)	Alaska	647,310	1,773
(2)	Lower 48 States	2,037,377	5,582
(3)	Total U.S.	2,684,687	7,355
Net Imports			
(4)	Imports (Gross Excluding Strategic Petroleum Reserve (SPR))	2,141,615	5,667
(5)	SPR Imports	9,772	27
(6)	Exports	39,653	109
(7)	Imports (Net Including SPR)	2,111,734	5,786
Other Sources			
(8)	SPR Stock Change (Withdrawal (+), Addition (-))	-5,835	-16
(9)	Other Stock Change (Withdrawal (+), Addition (-))	18,596	51
(10)	Product Supplied and Losses	-8,795	-24
(11)	Unaccounted for ^a	93,992	258
(12)	Total Other Sources	97,958	268
(13)	Crude Input to Refineries	4,894,379	13,409
(13) = (3) + (7) + (12)			
Natural Gas Liquids (NGL)			
(14)	Field Production	568,999	1,559
(15)	Net Imports ^b	2,762	8
(16)	Stock Change (Withdrawal (+), Addition (-)) ^b	2,446	7
(17)	Total NGL Supply	574,207	1,573
Other Liquids			
Unfinished Oils and Gasoline Blending Components, Total			
(18)	Stock Change (Withdrawal (+), Addition (-))	4,117	11
(19)	Imports	173,666	476
(20)	Other Hydrocarbons and Alcohol New Supply (Field Production)	29,253	80
(21)	Refinery Processing Gain ^a	249,382	683
(22)	Crude Oil Product Supplied	8,773	24
(23)	Total Other Liquids	465,191	1,274
(23) = (18) through (22)			
(24)	Total Production of Products	5,933,777	16,257
(24) = (13) + (17) + (23)			
Net Imports of Refined Products			
(25)	Imports (Gross)	597,993	1,638
(26)	Exports	272,431	746
(27)	Imports (Net)	325,562	892
(28)	Total New Supply of Products	6,259,339	17,149
(28) = (24) + (27)			
(29)	Refined Products Stock Change (Withdrawal (+), Addition (-))	-58,538	-160
(30)	Total Petroleum Products Supplied for Domestic Use	6,200,801	16,988
(30) = (28) + (29)			
(31)	Finished Motor Gasoline	2,640,741	7,235
(32)	Distillate Fuel Oil	1,102,503	3,021
(33)	Residual Fuel Oil	448,521	1,229
(34)	Jet Fuel	555,627	1,522
(35)	Liquefied Petroleum Gases	567,968	1,556
(36)	Other ^c	876,667	2,402
(37)	Crude Oil	8,773	24
(38)	Total Products Supplied	6,200,801	16,988
(38) = (31) through (37)			
Ending Stocks, All Oils			
(39)	Crude Oil (Excluding SPR)	322,695	--
(40)	Strategic Petroleum Reserve	585,692	--
(41)	Finished Motor Gasoline	180,621	--
(42)	Distillate Fuel Oil	132,204	--
(43)	Residual Fuel Oil	48,561	--
(44)	Jet Fuel	52,090	--
(45)	Liquefied Petroleum Gases	97,908	--
(46)	Other ^c	200,862	--
(47)	Total Stocks	1,620,633	--

^a Unaccounted for crude oil represents the difference between the supply and disposition of crude oil. Refinery processing gain represents the volumetric amount by which total output is greater than input for a given period of time.

^b Includes products in the pentanes plus category only.

^c Includes pentanes plus, other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, jet fuel, and liquefied petroleum gases.

(s) = Less than 500 barrels per day.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA), Monthly Petroleum Supply Reporting System. • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 2. U.S. Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply				Disposition					Ending Stocks
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c	
Crude Oil	2,684,687	-	2,151,367	93,992	-12,761	22	4,894,379	39,653	8,773	90,323
Natural Gas Liquids and LRGs	568,999	182,175	71,820	-	15,232	-	170,589	15,024	622,149	104,023
Pentanes Plus	112,783	-	3,349	-	-2,448	-	63,810	587	54,181	8,123
Liquefied Petroleum Gases	456,216	182,175	68,471	-	17,678	-	106,779	14,437	567,968	97,903
Ethane/Ethylene	173,928	5,915	2,509	-	-3,954	-	58	31	186,217	19,871
Propane/Propylene	172,837	147,626	41,858	-	17,387	-	75	10,182	334,677	48,915
Normal Butane/Butylene	54,210	24,612	18,241	-	2,517	-	50,171	4,224	40,151	19,322
Isobutane	55,241	4,022	5,863	-	1,728	-	56,475	0	8,923	9,788
Other Liquids	29,253	-	173,666	-	-4,117	-	260,108	0	-53,072	130,323
Other Hydrocarbons/Alcohol	29,253	-	173	-	784	-	26,642	0	0	1,408
Unfinished Oils	-	-	150,826	-	-7,522	-	221,691	0	-63,341	98,888
Motor Gasoline Blend. Comp.	-	-	22,665	-	2,624	-	9,819	0	10,222	39,711
Aviation Gasoline Blend. Comp.	-	-	0	-	-3	-	-44	0	47	13
Finished Petroleum Products	-	5,392,283	829,522	-	40,860	-	-	257,994	5,622,951	488,908
Finished Motor Gasoline	-	2,539,858	124,679	-	3,568	-	-	20,226	2,640,741	186,023
Leaded	-	134,614	396	-	-7,732	-	-	2,171	140,571	9,346
Unleaded	-	2,405,244	124,283	-	11,300	-	-	18,057	2,500,170	176,677
Finished Aviation Gasoline	-	8,538	50	-	-322	-	-	0	8,910	1,744
Jet Fuel	-	543,233	39,377	-	11,239	-	-	15,744	555,627	92,088
Naphtha-Type	-	64,853	2,840	-	-215	-	-	1,495	66,413	8,118
Kerosene-Type	-	478,380	36,537	-	11,454	-	-	14,248	489,215	45,002
Kerosene	-	16,281	1,865	-	437	-	-	1,985	15,524	5,371
Distillate Fuel Oil	-	1,067,485	101,455	-	26,504	-	-	39,933	1,102,503	132,259
Residual Fuel Oil	-	348,576	183,841	-	4,723	-	-	77,173	448,521	48,597
Naphtha for Petro. Feed. Use	-	50,498	16,936	-	-496	-	-	1,857	68,273	1,418
Other Oils for Petro. Feed. Use	-	97,586	39,625	-	49	-	-	7,733	129,429	2,205
Special Naphthas	-	20,006	4,186	-	4	-	-	3,784	20,408	3,003
Lubricants	-	61,161	4,284	-	-1,453	-	-	7,155	59,743	12,371
Waxes	-	6,193	418	-	-45	-	-	642	6,014	97
Petroleum Coke	-	201,680	731	-	-1,419	-	-	80,207	123,603	7,119
Asphalt and Road Oil	-	163,970	11,597	-	-1,828	-	-	1,055	176,340	18,703
Still Gas	-	245,535	0	-	0	-	-	0	245,535	0
Miscellaneous Products	-	23,703	676	-	-101	-	-	699	23,761	2,311
Total	3,282,939	5,574,458	2,926,395	93,992	39,214	22	5,325,076	312,671	6,200,801	1,820,001

^a Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(s) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tank and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 3. U.S. Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply				Disposition				
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c
Crude Oil	7,355	--	5,894	258	-35	(a)	13,409	109	24
Natural Gas Liquids and LRGs	1,559	499	197	--	42	--	467	41	1,705
Pentanes Plus	309	--	9	--	-7	--	175	2	148
Liquefied Petroleum Gases	1,250	499	188	--	48	--	293	40	1,556
Ethane/Ethylene	477	16	7	--	-11	--	(a)	(a)	510
Propane/Propylene	474	404	115	--	48	--	(a)	28	917
Normal Butane/Butylene	149	67	50	--	7	--	137	12	110
Isobutane	151	11	16	--	5	--	155	0	19
Other Liquids	80	--	478	--	-11	--	713	0	-148
Other Hydrocarbons/Alcohol	80	--	(a)	--	2	--	78	0	0
Unfinished Oils	--	--	413	--	-21	--	607	0	-174
Motor Gasoline Blend, Comp.	--	--	62	--	7	--	27	0	28
Aviation Gasoline Blend, Comp.	--	--	0	--	(a)	--	(a)	0	(a)
Finished Petroleum Products	--	14,773	1,431	--	112	--	--	707	15,405
Finished Motor Gasoline	--	6,959	342	--	10	--	--	55	7,235
Leaded	--	369	1	--	-21	--	--	6	385
Unleaded	--	5,590	341	--	31	--	--	49	6,850
Finished Aviation Gasoline	--	23	(a)	--	-1	--	--	0	24
Jet Fuel	--	1,468	108	--	31	--	--	43	1,522
Naphtha-Type	--	178	8	--	-1	--	--	4	182
Kerosene-Type	--	1,311	100	--	31	--	--	39	1,340
Kerosene	--	45	5	--	1	--	--	5	43
Distillate Fuel Oil	--	2,925	278	--	73	--	--	109	3,021
Residual Fuel Oil	--	950	504	--	13	--	--	211	1,229
Naphtha for Petro. Feed. Use	--	138	46	--	-1	--	--	5	182
Other Oils for Petro. Feed. Use	--	267	109	--	(a)	--	--	21	355
Special Naphthas	--	55	11	--	(a)	--	--	10	56
Lubricants	--	168	12	--	-4	--	--	20	164
Waxes	--	17	1	--	(a)	--	--	2	16
Petroleum Coke	--	552	2	--	-4	--	--	3	483
Asphalt and Road Oil	--	449	32	--	-5	--	--	0	673
Still Gas	--	673	0	--	0	--	--	0	673
Miscellaneous Products	--	65	2	--	(a)	--	--	2	65
Total	8,994	15,272	8,018	258	107	(a)	14,589	857	16,988

^a Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(a) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 4. PAD District I—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	10,891	--	441,265	10,674	7,078	1,153	7	468,737	11	0	14,828
Natural Gas Liquids and LRGs	9,169	15,018	14,492	--	33,980	3,654	--	887	977	67,141	8,427
Pentanes Plus	1,365	--	1,700	--	0	-71	--	12	23	3,101	4
Liquefied Petroleum Gases	7,804	15,018	12,792	--	33,980	3,725	--	875	955	64,039	8,382
Ethane/Ethylene	2,376	1,283	0	--	0	6	--	0	28	3,625	10
Propane/Propylene	3,562	13,259	10,973	--	33,042	3,201	--	3	355	57,277	4,980
Normal Butane/Butylene	1,370	1,127	1,739	--	488	355	--	472	573	3,324	1,180
Isobutane	496	-651	80	--	450	163	--	400	0	-188	28
Other Liquids	2,080	--	63,198	--	4,805	-557	--	71,363	0	-723	14,428
Other Hydrocarbons/Alcohol	2,080	--	173	--	0	209	--	2,044	0	0	30
Unfinished Oils	--	--	45,029	--	1,917	-563	--	59,669	0	-12,160	11,880
Motor Gasoline Blend. Comp.	--	--	17,996	--	2,888	-203	--	9,650	0	11,437	4,234
Aviation Gasoline Blend. Comp.	--	--	0	--	0	0	--	0	0	0	1
Finished Petroleum Products	--	549,110	418,315	--	880,575	28,709	--	--	19,432	1,799,859	160,000
Finished Motor Gasoline	--	243,748	110,883	--	524,903	2,404	--	--	1,328	875,802	54,917
Leaded	--	2,603	0	--	950	-908	--	--	13	4,448	10
Unleaded	--	241,145	110,883	--	523,953	3,312	--	--	1,315	871,354	54,917
Finished Aviation Gasoline	--	155	17	--	1,165	-73	--	--	0	1,410	20
Jet Fuel	--	35,153	28,254	--	128,939	3,273	--	--	1,270	167,803	13,562
Naphtha-Type	--	4,593	2,247	--	5,006	-814	--	--	(8)	12,662	50
Kerosene-Type	--	30,560	26,007	--	123,931	4,087	--	--	1,270	175,141	13,080
Kerosene	--	2,641	1,223	--	4,364	504	--	--	71	7,653	275
Distillate Fuel Oil	--	128,387	96,227	--	200,261	20,449	--	--	5,465	398,961	55,917
Residual Fuel Oil	--	50,044	162,744	--	9,319	4,449	--	--	5,257	212,401	23,230
Petrochemical Feedstocks ^e	--	4,244	2,976	--	-1,359	-268	--	--	232	5,897	7
Special Naphthas	--	1,276	399	--	2,955	-165	--	--	119	4,676	60
Lubricants	--	8,049	3,816	--	5,019	-62	--	--	2,155	14,791	3,000
Waxes	--	914	318	--	81	-8	--	--	91	1,230	5
Petroleum Coke	--	15,357	0	--	0	-180	--	--	3,053	12,484	70
Asphalt and Road Oil	--	32,936	10,881	--	4,189	-1,458	--	--	275	49,189	4,400
Still Gas	--	22,723	0	--	0	0	--	--	0	22,723	1
Miscellaneous Products	--	3,483	577	--	739	-156	--	--	115	4,840	80
Total	22,140	564,128	937,270	10,674	926,438	32,959	7	540,967	20,420	1,866,277	197,738

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(a) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tank and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 5. PAD District I—Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	30	—	1,209	29	19	3	(s)	1,284	(s)	0
Natural Gas Liquids and LRGs	25	41	40	—	93	10	—	2	3	184
Pentanes Plus	4	—	5	—	0	(s)	—	(s)	(s)	8
Liquefied Petroleum Gases	21	41	35	—	93	10	—	2	3	175
Ethane/Ethylene	7	4	0	—	0	(s)	—	0	(s)	10
Propane/Propylene	10	36	30	—	91	9	—	(s)	1	157
Normal Butane/Butylene	4	3	5	—	1	1	—	1	2	9
Isobutane	1	-2	(s)	—	1	(s)	—	1	0	-1
Other Liquids	6	—	173	—	13	-2	—	196	0	-2
Other Hydrocarbons/Alcohol	6	—	(s)	—	0	1	—	6	0	0
Unfinished Oils	—	—	123	—	5	-2	—	163	0	-33
Motor Gasoline Blend, Comp.	—	—	49	—	8	-1	—	26	0	31
Aviation Gasoline Blend, Comp. ...	—	—	0	—	0	0	—	0	0	0
Finished Petroleum Products	—	1,504	1,146	—	2,413	79	—	—	53	4,931
Finished Motor Gasoline	—	668	304	—	1,438	7	—	—	4	2,399
Leaded	—	7	0	—	3	-2	—	—	(s)	12
Unleaded	—	661	304	—	1,435	9	—	—	4	2,387
Finished Aviation Gasoline	—	(s)	(s)	—	3	(s)	—	—	0	4
Jet Fuel	—	96	77	—	353	9	—	—	3	515
Naphtha-Type	—	13	6	—	14	-2	—	—	(s)	35
Kerosene-Type	—	84	71	—	340	11	—	—	3	480
Kerosene	—	7	3	—	12	1	—	—	(s)	21
Distillate Fuel Oil	—	352	264	—	549	56	—	—	15	1,093
Residual Fuel Oil	—	137	446	—	26	12	—	—	14	582
Petrochemical Feedstocks ^e	—	12	8	—	-4	-1	—	—	1	16
Special Naphthas	—	3	1	—	8	(s)	—	—	(s)	13
Lubricants	—	22	10	—	14	(s)	—	—	6	41
Waxes	—	3	1	—	(s)	(s)	—	—	(s)	3
Petroleum Coke	—	42	0	—	0	(s)	—	—	8	34
Asphalt and Road Oil	—	90	30	—	11	-4	—	—	1	135
Still Gas	—	62	0	—	0	0	—	—	0	62
Miscellaneous Products	—	10	2	—	2	(s)	—	—	(s)	13
Total	61	1,546	2,566	29	2,538	90	(s)	1,482	56	5,113

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.
^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 6. PAD District II—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	270,658	--	179,178	-5,905	657,441	-1,976	0	1,099,387	3,981	0	88,37
Natural Gas Liquids and LRGs	105,545	37,732	28,221	--	22,227	9,793	--	45,080	3,933	134,919	35,12
Pentanes Plus	16,852	--	431	--	6,520	-1,091	--	15,470	0	9,424	2,12
Liquefied Petroleum Gases	88,693	37,732	27,790	--	15,707	10,884	--	29,610	3,933	125,495	31,01
Ethane/Ethylene	28,207	202	1,511	--	-9,264	1,299	--	1	(8)	19,356	5,53
Propane/Propylene	39,158	36,766	19,615	--	15,600	8,383	--	0	2,312	100,444	17,00
Normal Butane/Butylene	13,786	433	5,898	--	1,683	1,126	--	13,308	1,621	5,745	5,12
Isobutane	7,542	331	766	--	7,688	76	--	16,301	0	-50	2,43
Other Liquids	1,517	--	437	--	1,199	-2,447	--	25,288	0	-19,668	22,43
Other Hydrocarbons/Alcohol	1,517	--	0	--	0	60	--	1,457	0	0	10
Unfinished Oils	--	--	0	--	904	-2,412	--	12,151	0	-8,835	14,53
Motor Gasoline Blend. Comp.	--	--	437	--	295	-70	--	11,635	0	-10,839	7,82
Aviation Gasoline Blend. Comp.	--	--	0	--	0	-25	--	25	0	0	8
Finished Petroleum Products	--	1,183,571	8,526	--	243,900	-393	--	--	8,754	1,429,636	182,40
Finished Motor Gasoline	--	633,060	2,129	--	151,658	-2,069	--	--	714	798,202	47,51
Leaded	--	22,996	0	--	1,362	-3,334	--	--	1	27,691	2,43
Unleaded	--	610,064	2,129	--	150,296	1,265	--	--	713	760,511	45,21
Finished Aviation Gasoline	--	1,221	1	--	1,079	28	--	--	0	2,273	50
Jet Fuel	--	72,657	598	--	31,658	2,643	--	--	662	101,608	10,72
Naphtha-Type	--	5,227	568	--	1,120	-11	--	--	6	6,920	86
Kerosene-Type	--	67,430	30	--	30,538	2,654	--	--	656	94,688	8,74
Kerosene	--	5,700	0	--	-58	-43	--	--	42	5,643	1,57
Distillate Fuel Oil	--	258,822	2,254	--	58,031	1,976	--	--	478	316,653	32,78
Residual Fuel Oil	--	26,612	906	--	-6,221	-168	--	--	653	20,812	3,32
Petrochemical Feedstocks ^e	--	14,856	624	--	1,029	59	--	--	5	16,445	28
Special Naphthas	--	5,627	1,286	--	1,277	-139	--	--	156	8,173	46
Lubricants	--	8,897	305	--	3,216	-463	--	--	497	12,384	1,79
Waxes	--	560	54	--	0	42	--	--	47	525	14
Petroleum Coke	--	43,566	0	--	0	-2,169	--	--	3,035	42,700	1,04
Asphalt and Road Oil	--	55,142	272	--	2,360	-132	--	--	458	57,468	8,85
Still Gas	--	51,650	0	--	0	0	--	--	0	51,650	1
Miscellaneous Products	--	5,201	97	--	-149	42	--	--	8	5,099	57
Total	377,720	1,221,303	216,362	-5,905	924,767	4,977	0	1,169,735	14,848	1,544,887	231,38

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(a) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 7. PAD District II—Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	742	--	491	-16	1,801	-5	0	3,012	11	0
Natural Gas Liquids and LRGs	289	103	77	--	61	27	--	124	11	370
Pentanes Plus	46	--	1	--	18	-3	--	42	0	26
Liquefied Petroleum Gases	243	103	76	--	43	30	--	81	11	344
Ethane/Ethylene	77	1	4	--	-25	4	--	(s)	(s)	53
Propane/Propylene	107	101	54	--	43	23	--	0	6	275
Normal Butane/Butylene	38	1	16	--	5	3	--	36	4	16
Isobutane	21	1	2	--	21	(s)	--	45	0	(s)
Other Liquids	4	--	1	--	3	-7	--	69	0	-54
Other Hydrocarbons/Alcohol	4	--	0	--	0	(s)	--	4	0	0
Unfinished Oil	--	--	0	--	2	-7	--	33	0	-24
Motor Gasoline Blend, Comp.	--	--	1	--	1	(s)	--	32	0	-30
Aviation Gasoline Blend, Comp.	--	--	0	--	0	(s)	--	(s)	0	0
Finished Petroleum Products	--	3,243	23	--	858	-1	--	--	19	3,917
Finished Motor Gasoline	--	1,734	6	--	416	-6	--	--	2	2,159
Leaded	--	63	0	--	4	-9	--	--	(s)	76
Unleaded	--	1,671	6	--	412	3	--	--	2	2,084
Finished Aviation Gasoline	--	3	(s)	--	3	(s)	--	--	0	6
Jet Fuel	--	199	2	--	87	7	--	--	2	278
Naphtha-Type	--	14	2	--	3	(s)	--	--	(s)	19
Kerosene-Type	--	185	(s)	--	84	7	--	--	2	259
Kerosene	--	16	0	--	(s)	(s)	--	--	(s)	15
Distillate Fuel Oil	--	709	6	--	159	5	--	--	1	868
Residual Fuel Oil	--	73	2	--	-17	(s)	--	--	2	57
Petrochemical Feedstocks ^e	--	41	2	--	3	(s)	--	--	(s)	45
Special Naphthas	--	15	4	--	3	(s)	--	--	(s)	22
Lubricants	--	24	1	--	9	-1	--	--	1	34
Waxes	--	2	(s)	--	0	(s)	--	--	(s)	1
Petroleum Coke	--	119	0	--	0	-6	--	--	8	117
Asphalt and Road Oil	--	151	1	--	7	(s)	--	--	1	157
Still Gas	--	142	0	--	0	0	--	--	0	142
Miscellaneous Products	--	14	(s)	--	(s)	(s)	--	--	(s)	14
Total	1,035	3,346	593	-16	2,534	14	0	3,205	40	4,233

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.
^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 8. PAD District III—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	1,219,070	--	1,418,632	81,231	-511,626	-4,579	5	2,211,881	0	0	737,141
Natural Gas Liquids and LRGs	381,887	106,255	23,827	--	-34,951	2,866	--	93,318	6,633	374,201	80,562
Pentanes Plus	69,765	--	276	--	-3,244	-1,199	--	35,883	543	31,570	3,757
Liquefied Petroleum Gases	312,122	106,255	23,551	--	-31,707	4,065	--	57,435	6,090	342,631	56,805
Ethane/Ethylene	132,983	3,964	998	--	16,523	-5,299	--	57	0	159,710	14,154
Propane/Propylene	110,821	81,903	9,154	--	-43,303	5,720	--	56	4,145	148,654	24,813
Normal Butane/Butylene	26,134	16,126	9,084	--	1,168	2,154	--	23,239	1,946	25,173	11,132
Isobutane	42,184	4,262	4,315	--	-6,095	1,490	--	34,083	0	9,093	6,708
Other Liquids	18,807	--	107,642	--	-8,860	-3,689	--	149,213	0	-25,935	63,941
Other Hydrocarbons/Alcohol	18,807	--	0	--	0	180	--	18,627	0	0	511
Unfinished Oils	--	--	103,906	--	-3,677	-6,564	--	141,434	0	-34,641	46,345
Motor Gasoline Blend. Comp.	--	--	3,736	--	-3,183	2,663	--	-10,814	0	8,704	18,917
Aviation Gasoline Blend. Comp.	--	--	0	--	0	32	--	-34	0	2	8
Finished Petroleum Products	--	2,465,352	78,758	--	-1,153,798	12,410	--	--	127,328	1,250,574	131,221
Finished Motor Gasoline	--	1,140,568	5,173	--	-693,212	3,484	--	--	15,612	433,433	49,461
Leaded	--	24,301	26	--	-3,661	-1,936	--	--	2,113	20,489	80
Unleaded	--	1,116,267	5,147	--	-689,551	5,420	--	--	13,498	412,945	48,811
Finished Aviation Gasoline	--	4,958	0	--	-2,460	-93	--	--	0	2,591	57
Jet Fuel	--	272,201	6,138	--	-170,864	5,130	--	--	8,357	93,988	17,884
Naphtha-Type	--	35,234	0	--	-7,871	487	--	--	321	26,555	2,241
Kerosene-Type	--	236,967	6,138	--	-162,993	4,643	--	--	8,036	67,433	15,643
Kerosene	--	6,777	442	--	-4,306	68	--	--	1,675	1,170	1,144
Distillate Fuel Oil	--	475,890	630	--	-260,594	3,152	--	--	26,292	186,482	28,151
Residual Fuel Oil	--	133,415	10,580	--	-3,239	641	--	--	19,564	120,551	14,381
Petrochemical Feedstocks ^e	--	124,711	52,582	--	330	-191	--	--	6,335	171,479	2,832
Special Naphthas	--	12,117	2,406	--	-4,232	285	--	--	2,202	7,804	1,808
Lubricants	--	37,044	93	--	-7,981	-808	--	--	3,269	26,695	5,802
Waxes	--	3,569	18	--	-81	-10	--	--	327	3,189	475
Petroleum Coke	--	88,788	298	--	0	893	--	--	43,242	44,951	3,550
Asphalt and Road Oil	--	40,866	396	--	-6,569	-190	--	--	54	34,829	3,889
Still Gas	--	111,525	0	--	0	0	--	--	0	111,525	0
Miscellaneous Products	--	12,923	2	--	-590	49	--	--	399	11,687	1,221
Total	1,619,764	2,571,607	1,628,859	81,231	-1,707,235	7,008	5	2,454,412	133,961	1,598,840	982,774

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 9. PAD District III—Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	3,340	—	3,887	223	-1,402	-13	(s)	6,060	0	0
Natural Gas Liquids and LRGs	1,046	291	65	—	-96	8	—	256	18	1,025
Pentanes Plus	191	—	1	—	-9	-3	—	98	1	86
Liquefied Petroleum Gases	855	291	65	—	-87	11	—	157	17	839
Ethane/Ethylene	364	11	3	—	45	-15	—	(s)	0	438
Propane/Propylene	304	224	25	—	-119	16	—	(s)	11	407
Normal Butane/Butylene	72	44	25	—	3	8	—	64	5	69
Isobutane	116	12	12	—	-17	4	—	93	0	25
Other Liquids	52	—	295	—	-19	-10	—	409	0	-71
Other Hydrocarbons/Alcohol	52	—	0	—	0	(s)	—	51	0	0
Unfinished Oils	—	—	285	—	-10	-18	—	387	0	-95
Motor Gasoline Blend, Comp.	—	—	10	—	-9	7	—	-30	0	24
Aviation Gasoline Blend, Comp. ...	—	—	0	—	0	(s)	—	(s)	0	(s)
Finished Petroleum Products	—	6,754	216	—	-3,161	34	—	—	349	3,426
Finished Motor Gasoline	—	3,125	14	—	-1,899	10	—	—	43	1,187
Leaded	—	87	(s)	—	-10	-5	—	—	6	56
Unleaded	—	3,058	14	—	-1,889	15	—	—	37	1,131
Finished Aviation Gasoline	—	14	0	—	-7	(s)	—	—	0	7
Jet Fuel	—	748	17	—	-468	14	—	—	23	258
Naphtha-Type	—	97	0	—	-22	1	—	—	1	73
Kerosene-Type	—	649	17	—	-447	13	—	—	22	185
Kerosene	—	19	1	—	-12	(s)	—	—	5	3
Distillate Fuel Oil	—	1,304	2	—	-714	9	—	—	72	511
Residual Fuel Oil	—	366	29	—	-9	2	—	—	54	330
Petrochemical Feedstocks ^e	—	342	144	—	1	-1	—	—	17	470
Special Naphthas	—	33	7	—	-12	1	—	—	6	21
Lubricants	—	101	(s)	—	-22	-2	—	—	9	73
Waxes	—	10	(s)	—	(s)	(s)	—	—	1	9
Petroleum Coke	—	243	1	—	0	2	—	—	118	123
Asphalt and Road Oil	—	112	1	—	-18	-1	—	—	(s)	95
Still Gas	—	306	0	—	0	0	—	—	0	306
Miscellaneous Products	—	35	(s)	—	-2	(s)	—	—	1	33
Total	4,438	7,045	4,483	223	-4,677	19	(s)	6,724	367	4,380

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.
^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.
^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 10. PAD District IV—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	181,723	--	27,702	8,391	-50,323	-339	0	167,830	2	0	12,002
Natural Gas Liquids and LRGs	44,082	2,551	3,537	--	-21,256	-18	--	7,034	54	21,854	1,107
Pentanes Plus	9,179	--	942	--	-3,276	-31	--	1,768	0	5,110	150
Liquefied Petroleum Gases	34,913	2,551	2,595	--	-17,980	13	--	5,268	54	16,744	1,000
Ethane/Ethylene	10,349	5	0	--	-7,259	40	--	0	0	3,055	171
Propane/Propylene	15,495	2,417	1,217	--	-5,339	-45	--	2	21	13,612	307
Normal Butane/Butylene	6,310	303	1,040	--	-3,339	9	--	4,110	33	162	320
Isobutane	2,759	-174	338	--	-2,043	9	--	1,156	0	-285	140
Other Liquids	637	--	5	--	0	-75	--	310	0	407	4,801
Other Hydrocarbons/Alcohol	637	--	0	--	0	19	--	618	0	0	100
Unfinished Oils	--	--	5	--	0	-554	--	-284	0	843	1,800
Motor Gasoline Blend. Comp.	--	--	0	--	0	460	--	21	0	-481	2,700
Aviation Gasoline Blend. Comp.	--	--	0	--	0	0	--	-45	0	45	0
Finished Petroleum Products	--	176,529	1,355	--	-6,974	-1,098	--	--	448	171,560	11,210
Finished Motor Gasoline	--	96,588	491	--	-5,210	-400	--	--	5	82,264	4,807
Leaded	--	20,748	69	--	-4,237	-833	--	--	1	17,412	1,247
Unleaded	--	65,840	422	--	-973	433	--	--	4	64,852	3,560
Finished Aviation Gasoline	--	298	0	--	175	14	--	--	0	459	55
Jet Fuel	--	14,482	0	--	3,322	-90	--	--	1	17,893	1,010
Naphtha-Type	--	4,738	0	--	-2,123	-18	--	--	(s)	2,633	374
Kerosene-Type	--	9,744	0	--	5,445	-72	--	--	(s)	15,261	640
Kerosene	--	52	0	--	0	-34	--	--	0	86	25
Distillate Fuel Oil	--	46,312	761	--	-5,261	17	--	--	1	41,794	3,270
Residual Fuel Oil	--	3,932	99	--	0	-9	--	--	272	3,768	40
Petrochemical Feedstocks ^e	--	45	4	--	0	-3	--	--	0	52	1
Special Naphthas	--	3	0	--	0	-4	--	--	2	5	1
Lubricants	--	70	0	--	0	-124	--	--	55	139	10
Waxes	--	489	0	--	0	33	--	--	1	455	100
Petroleum Coke	--	3,985	0	--	0	-102	--	--	102	3,985	7
Asphalt and Road Oil	--	12,160	0	--	0	-406	--	--	10	12,556	1,285
Still Gas	--	7,394	0	--	0	0	--	--	0	7,394	0
Miscellaneous Products	--	719	0	--	0	10	--	--	(s)	709	0
Total	226,452	179,080	32,599	8,391	-78,553	-1,530	0	175,174	504	193,821	28,000

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 11. PAD District IV—Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	498	—	76	23	-138	-1	0	460	(s)	0
Natural Gas Liquids and LRGs	121	7	10	—	-58	(s)	—	19	(s)	60
Pentanes Plus	25	—	3	—	-9	(s)	—	5	0	14
Liquefied Petroleum Gases	96	7	7	—	-49	(s)	—	14	(s)	46
Ethane/Ethylene	28	(s)	0	—	-20	(s)	—	0	0	8
Propane/Propylene	42	7	3	—	-15	(s)	—	(s)	(s)	38
Normal Butane/Butylene	17	1	3	—	-9	(s)	—	11	(s)	(s)
Isobutane	8	(s)	1	—	-6	(s)	—	3	0	-1
Other Liquids	2	—	(s)	—	0	(s)	—	1	0	1
Other Hydrocarbons/Alcohol	2	—	0	—	0	(s)	—	2	0	0
Finished Oils	—	—	(s)	—	0	-2	—	-1	0	2
Motor Gasoline Blend. Comp.	—	—	0	—	0	1	—	(s)	0	-1
Aviation Gasoline Blend. Comp. ...	—	—	0	—	0	0	—	(s)	0	(s)
Finished Petroleum Products	—	484	4	—	-19	-3	—	—	1	470
Finished Motor Gasoline	—	237	1	—	-14	-1	—	—	(s)	225
Leaded	—	57	(s)	—	-12	-2	—	—	(s)	48
Unleaded	—	180	1	—	-3	1	—	—	(s)	178
Finished Aviation Gasoline	—	1	0	—	(s)	(s)	—	—	0	1
Jet Fuel	—	40	0	—	9	(s)	—	—	(s)	49
Naphtha-Type	—	13	0	—	-6	(s)	—	—	(s)	7
Kerosene-Type	—	27	0	—	15	(s)	—	—	(s)	42
Kerosene	—	(s)	0	—	0	(s)	—	—	0	(s)
Distillate Fuel Oil	—	127	2	—	-14	(s)	—	—	(s)	115
Residual Fuel Oil	—	11	(s)	—	0	(s)	—	—	1	10
Petrochemical Feedstocks ^e	—	(s)	(s)	—	0	(s)	—	—	0	(s)
Special Naphthas	—	(s)	0	—	0	(s)	—	—	(s)	(s)
Lubricants	—	(s)	0	—	0	(s)	—	—	(s)	(s)
Waxes	—	1	0	—	0	(s)	—	—	(s)	1
Petroleum Coke	—	11	0	—	0	(s)	—	—	(s)	11
Asphalt and Road Oil	—	33	0	—	0	-1	—	—	(s)	34
Still Gas	—	20	0	—	0	0	—	—	0	20
Miscellaneous Products	—	2	0	—	0	(s)	—	—	(s)	2
Total	620	491	89	23	-215	-4	0	480	1	531

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.
^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data: from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 12. PAD District V—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, 1990
(Thousand Barrels)

Commodity	Supply					Disposition						Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d		
Crude Oil	1,002,344	--	84,610	-398	-102,570	-7,020	10	946,544	35,679	8,773	78,332	
Natural Gas Liquids and LRGs	28,306	20,619	1,743	--	0	-1,063	--	24,270	3,427	24,034	2,718	
Pentanes Plus	15,622	--	0	--	0	-54	--	10,679	22	4,975	44	
Liquefied Petroleum Gases	12,684	20,619	1,743	--	0	-1,009	--	13,591	3,405	19,059	2,671	
Ethane/Ethylene	13	461	0	--	0	0	--	0	3	471	0	
Propane/Propylene	3,801	13,281	899	--	0	128	--	14	3,350	14,489	844	
Normal Butane/Butylene	6,610	6,623	480	--	0	-1,127	--	9,042	52	5,746	1,574	
Isobutane	2,260	254	364	--	0	-10	--	4,535	0	-1,647	293	
Other Liquids	6,212	--	2,384	--	856	2,651	--	13,954	0	-7,153	31,810	
Other Hydrocarbons/Alcohol	6,212	--	0	--	0	316	--	5,896	0	0	352	
Unfinished Oils	--	--	1,888	--	856	2,571	--	8,721	0	-8,548	23,924	
Motor Gasoline Blend. Comp.	--	--	496	--	0	-226	--	-673	0	1,395	7,535	
Aviation Gasoline Blend. Comp.	--	--	0	--	0	-10	--	10	0	0	2	
Finished Petroleum Products	--	1,017,721	22,568	--	36,297	1,232	--	--	104,031	971,323	89,030	
Finished Motor Gasoline	--	435,894	8,003	--	21,861	149	--	--	2,569	461,040	23,734	
Leaded	--	63,968	301	--	5,586	-721	--	--	43	70,531	5,351	
Unleaded	--	371,928	5,702	--	16,275	870	--	--	2,526	390,509	18,383	
Finished Aviation Gasoline	--	1,906	32	--	41	-198	--	--	0	2,177	352	
Jet Fuel	--	148,740	4,387	--	6,945	283	--	--	5,453	154,336	8,861	
Naphtha-Type	--	15,061	25	--	3,866	141	--	--	1,167	17,644	2,054	
Kerosene-Type	--	133,679	4,362	--	3,079	142	--	--	4,286	136,692	6,817	
Kerosene	--	1,111	0	--	0	-58	--	--	197	972	80	
Distillate Fuel Oil	--	158,074	1,583	--	7,563	910	--	--	7,697	158,613	12,487	
Residual Fuel Oil	--	132,573	9,512	--	141	-190	--	--	51,427	90,989	7,096	
Petrochemical Feedstocks ^e	--	4,228	375	--	0	-44	--	--	2,818	1,829	310	
Special Naphthas	--	983	97	--	0	27	--	--	1,305	-252	108	
Lubricants	--	7,101	70	--	-254	4	--	--	1,180	5,733	1,736	
Waxes	--	661	28	--	0	-102	--	--	177	614	175	
Petroleum Coke	--	49,964	433	--	0	139	--	--	30,775	19,483	1,823	
Asphalt and Road Oil	--	22,866	48	--	0	358	--	--	257	22,299	2,178	
Still Gas	--	52,243	0	--	0	0	--	--	0	52,243	0	
Miscellaneous Products	--	1,377	0	--	0	-46	--	--	176	1,247	81	
Total	1,036,862	1,038,340	111,305	-398	-65,417	-4,200	10	984,768	143,138	996,977	189,071	

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 13. PAD District V—Daily Average Supply and Disposition of Crude Oil and Petroleum Products, 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	2,746	—	232	-1	-281	-19	(s)	2,593	98	24
Natural Gas Liquids and LRGs	78	56	5	—	0	-3	—	66	9	66
Pentanes Plus	43	—	0	—	0	(s)	—	29	(s)	14
Liquefied Petroleum Gases	35	56	5	—	0	-3	—	37	9	52
Ethane/Ethylene	(s)	1	0	—	0	0	—	0	(s)	1
Propane/Propylene	10	36	2	—	0	(s)	—	(s)	9	40
Normal Butane/Butylene	18	18	1	—	0	-3	—	25	(s)	16
Isobutane	6	1	1	—	0	(s)	—	12	0	-5
Other Liquids	17	—	7	—	2	7	—	38	0	-20
Other Hydrocarbons/Alcohol	17	—	0	—	0	1	—	16	0	0
Unfinished Oils	—	—	5	—	2	7	—	24	0	-23
Motor Gasoline Blend, Comp.	—	—	1	—	0	-1	—	-2	0	4
Aviation Gasoline Blend, Comp. ...	—	—	0	—	0	(s)	—	(s)	0	0
Finished Petroleum Products	—	2,788	62	—	99	3	—	—	285	2,661
Finished Motor Gasoline	—	1,194	16	—	60	(s)	—	—	7	1,263
Leaded	—	175	1	—	15	-2	—	—	(s)	193
Unleaded	—	1,019	16	—	45	2	—	—	7	1,070
Finished Aviation Gasoline	—	5	(s)	—	(s)	-1	—	—	0	6
Jet Fuel	—	408	12	—	19	1	—	—	15	423
Naphtha-Type	—	41	(s)	—	11	(s)	—	—	3	48
Kerosene-Type	—	366	12	—	8	(s)	—	—	12	374
Kerosene	—	3	0	—	0	(s)	—	—	1	3
Distillate Fuel Oil	—	433	4	—	21	2	—	—	21	435
Residual Fuel Oil	—	363	26	—	(s)	-1	—	—	141	249
Petrochemical Feedstocks ^e	—	12	1	—	0	(s)	—	—	8	5
Special Naphthas	—	3	(s)	—	0	(s)	—	—	4	-1
Lubricants	—	19	(s)	—	-1	(s)	—	—	3	16
Waxes	—	2	(s)	—	0	(s)	—	—	(s)	2
Petroleum Coke	—	137	1	—	0	(s)	—	—	84	53
Asphalt and Road Oil	—	63	(s)	—	0	1	—	—	1	61
Sill Gas	—	143	0	—	0	0	—	—	0	143
Miscellaneous Products	—	4	0	—	0	(s)	—	—	(s)	3
Total	2,841	2,845	305	-1	-179	-12	(s)	2,698	392	2,731

^a Represents the PAD District in which the material entered the United States and not necessarily where the crude oil or product is processed and/or consumed.
^b Unaccounted for crude oil represents the difference between the supply and disposition of crude oil.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

LRG = Liquefied Refinery Gas.

Note: Totals may not equal sum of components due to independent rounding.

Sources: • Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," EIA-814, "Monthly Imports Report," EIA-816, "Monthly Natural Gas Liquids Report," and EIA-817, "Monthly Tanker and Barge Movement Report." • Domestic crude oil production from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. • Export data from the Bureau of the Census and Form EIA-810, "Monthly Refinery Report."

Table 14. Production of Crude Oil by PAD District and State, 1990
(Thousand Barrels)

PAD District and State	Total	Daily Average
PAD District I	10,891	30
Florida	5,674	16
New York	416	1
Pennsylvania	2,643	7
Virginia	15	(s)
West Virginia	2,143	6
PAD District II	270,658	742
Illinois	19,954	55
Indiana	3,000	8
Kansas	55,427	152
Kentucky	5,411	15
Michigan	19,675	54
Missouri	146	(s)
Nebraska	5,890	16
North Dakota	36,716	101
Ohio	10,006	27
Oklahoma	112,274	308
South Dakota	1,648	5
Tennessee	508	1
PAD District III	1,219,070	3,340
Alabama	18,538	51
Arkansas	10,387	28
Louisiana ^a	147,583	404
Mississippi	27,033	74
New Mexico	67,247	184
Texas ^a	678,480	1,859
Federal Offshore PAD District III	269,803	739
PAD District IV	181,723	498
Colorado	30,454	83
Montana	19,810	54
Utah	27,604	76
Wyoming	103,855	285
PAD District V	1,002,344	2,746
Alaska ^a	647,310	1,773
South Alaska	11,146	31
North Slope	636,164	1,743
Arizona	122	(s)
California ^a	320,868	879
Nevada	4,012	11
Federal Offshore PAD District V	30,032	82
U.S. Total^a	2,684,687	7,355

^a Includes the following offshore production (thousand barrels): Alaska: State - 46,780; California: State - 23,559; Louisiana: State - 22,987; Texas: State - 1,769; U.S. Total, including Federal offshore - 394,930.

(s) = Less than 500 barrels or less than 500 barrels per day.

Note: Crude oil production data for Alabama, Kentucky, Mississippi, New Mexico, West Virginia, and PAD District V Federal Offshore are unchanged from those reported in the *Petroleum Supply Monthly* during 1990. • Annual crude oil production data for Pennsylvania was estimated based on first purchaser monthly crude oil volumes collected on Form EIA-182, "Domestic Crude Oil First Purchase Report." • A final revision to the State data for 1990 will appear in the 1991 *Petroleum Supply Annual*. • Totals may not equal sum of components due to independent rounding.

Sources: State conservation agencies, U.S. Department of the Interior, Minerals Management Service and the Conservation Committee of California Oil Producers.

Revised 1989 crude oil production statistics are available in Appendix C.

Table 15. Natural Gas Plant Net Production and Stocks of Petroleum Products by PAD and Refining Districts, 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okl., Kans., Mo.	Total
Net Production							
Natural Gas Liquids	2,506	6,663	9,169	7,369	4,937	93,239	105,545
Pentanes Plus	540	825	1,365	1,520	1,227	14,105	16,852
Liquefied Petroleum Gases	1,966	5,838	7,804	5,849	3,710	79,134	88,693
Ethane	554	1,822	2,376	895	1	27,311	28,207
Propane	814	2,748	3,562	2,871	2,240	34,047	39,158
Normal Butane	456	914	1,370	1,141	1,419	11,226	13,786
Isobutane	142	354	496	942	50	6,550	7,542
Stocks							
Natural Gas Liquids	138	37	175	108	31	2,360	2,499
Pentanes Plus	5	3	8	20	13	254	287
Liquefied Petroleum Gases	133	34	167	88	18	2,106	2,212
Ethane	0	0	0	9	0	670	679
Propane	80	30	110	40	8	787	835
Normal Butane	51	2	53	20	10	359	389
Isobutane	2	2	4	19	0	290	309

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U.S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Net Production									
Natural Gas Liquids	210,516	32,812	83,207	7,741	47,611	381,887	44,092	28,306	568,999
Pentanes Plus	38,895	7,079	15,128	2,255	6,408	69,765	9,179	15,622	112,783
Liquefied Petroleum Gases	171,621	25,733	68,079	5,486	41,203	312,122	34,913	12,684	456,216
Ethane	71,186	13,026	28,570	1,189	19,012	132,983	10,349	13	173,928
Propane	63,147	7,821	23,447	2,242	14,164	110,821	15,495	3,801	172,837
Normal Butane	27,164	-14,932	7,254	1,415	5,233	26,134	6,310	6,610	54,210
Isobutane	10,124	19,818	8,808	640	2,794	42,184	2,759	2,260	55,241
Stocks									
Natural Gas Liquids	942	1,989	995	161	125	4,212	208	114	7,208
Pentanes Plus	435	294	272	39	17	1,057	79	20	1,451
Liquefied Petroleum Gases	507	1,695	723	122	108	3,155	129	94	5,757
Ethane	78	623	5	48	14	766	6	0	1,451
Propane	170	512	182	40	60	964	63	78	2,048
Normal Butane	217	340	370	27	24	978	49	13	1,482
Isobutane	42	220	166	9	10	447	11	5	776

Note: Refer to Appendix A for Refining District descriptions.

Source: Energy Information Administration (EIA) Form EIA-816, "Monthly Natural Gas Liquids Report."

Table 16. Refinery Input of Crude Oil and Petroleum Products by PAD and Refining Districts, 1990
(Thousand Barrels, Except Where Noted)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okl., Kans., Mo.	Total
Crude Oil	434,089	34,548	468,737	732,562	117,671	249,154	1,099,387
Natural Gas Liquids	874	13	887	26,226	3,301	15,553	45,080
Pentanes Plus	12	0	12	6,719	752	7,999	15,470
Liquefied Petroleum Gases	862	13	875	19,507	2,549	7,554	29,610
Ethane	0	0	0	1	0	0	1
Propane	3	0	3	0	0	0	0
Normal Butane	459	13	472	8,928	1,646	2,734	13,308
Isobutane	400	0	400	10,578	903	4,820	16,301
Other Liquids	66,042	3,321	71,363	18,104	331	6,833	25,268
Other Hydrocarbons/Alcohol	2,035	9	2,044	1,198	50	209	1,457
Unfinished Oils (net)	56,229	3,440	59,669	6,591	194	5,366	12,151
Motor Gasoline Blend. Comp. (net)	9,778	-128	9,650	10,336	87	1,212	11,635
Aviation Gasoline Blend. Comp. (net)	0	0	0	-21	0	46	25
Total Input to Refineries	503,005	37,982	540,987	776,892	121,303	271,540	1,169,735
Atmospheric Crude Oil Distillation							
Gross Input (daily average)	1,160	97	1,257	2,029	324	688	3,041
Operable Capacity (daily average)	1,381	124	1,505	2,224	343	740	3,307
Operable Utilization Rate (percent) ^a	84.1	78.1	83.6	91.2	94.5	93.0	92.0
Downstream Processing							
Fresh Feed Input (daily average)							
Catalytic Cracking	482	17	499	728	112	233	1,073
Catalytic Hydrocracking	59	4	63	116	0	6	122
Delayed and Fluid Coking	71	0	71	146	53	59	259
Crude Oil Qualities							
Sulfur Content, Weighted Average (percent)	1.18	0.67	1.15	0.99	1.86	0.64	1.01
API Gravity, Weighted Average (degrees)	30.49	37.87	31.03	34.45	31.01	36.30	34.50
Operable Capacity (daily average)	1,381	124	1,505	2,224	343	740	3,307
Operating	1,291	122	1,414	2,199	343	740	3,282
Idle	89	2	91	25	0	0	25
Alaskan Crude Oil Receipts	639	0	639	4,898	0	4,903	9,801

See footnotes at end of table.

Table 16. Refinery Input of Crude Oil and Petroleum Products by PAD and Refining Districts, 1990 (Continued)
(Thousand Barrels, Except Where Noted)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U.S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Crude Oil	187,930	1,072,854	858,850	66,531	25,716	2,211,881	167,830	946,544	4,894,379
Natural Gas Liquids	16,391	40,507	30,835	3,439	2,146	93,318	7,034	24,270	170,589
Pentanes Plus	10,154	16,747	5,251	2,105	1,628	35,883	1,766	10,679	63,810
Liquefied Petroleum Gases	6,237	23,760	25,584	1,334	520	57,435	5,268	13,591	106,779
Ethane	0	57	0	0	0	57	0	0	58
Propane	5	49	0	0	2	56	2	14	75
Normal Butane	2,270	9,353	11,368	214	34	23,239	4,110	9,042	50,171
Isobutane	3,962	14,301	14,216	1,120	484	34,083	1,156	4,535	56,475
Other Liquids	2,480	130,175	15,479	875	204	149,213	310	13,954	260,108
Other Hydrocarbons/Alcohol	2,360	10,675	5,334	14	244	18,627	618	5,896	28,642
Unfinished Oils (net)	965	135,198	4,469	763	39	141,434	-284	8,721	221,691
Motor Gasoline Blend. Comp. (net)	-845	-15,696	5,708	98	-79	-10,814	21	-673	9,819
Aviation Gasoline Blend. Comp. (net)	0	-2	-32	0	0	-34	-45	10	-44
Total Input to Refineries	206,801	1,243,536	905,164	70,845	28,066	2,454,412	175,174	984,768	5,325,076
Atmospheric Crude Oil Distillation									
Gross Input (daily average)	518	2,966	2,397	179	70	6,130	463	2,718	13,610
Operable Capacity (daily average)	583	3,336	2,915	254	78	7,166	555	3,091	15,623
Operable Utilization Rate (percent) ^a	88.9	88.9	82.2	70.5	90.6	85.6	83.5	87.9	87.1
Downstream Processing									
Fresh Feed Input (daily average)									
Catalytic Cracking	182	1,292	744	30	23	2,272	163	688	4,694
Catalytic Hydrocracking	21	163	195	0	0	379	5	372	941
Delayed and Fluid Coking	9	187	344	12	0	552	20	454	1,356
Crude Oil Qualities									
Sulfur Content, Weighted Average (percent)	0.73	1.04	1.35	1.48	0.81	1.14	0.92	1.11	1.10
API Gravity, Weighted Average (degrees)	38.51	33.44	31.30	33.58	39.36	33.10	35.45	25.65	31.86
Operable Capacity (daily average)	583	3,336	2,915	254	78	7,166	555	3,091	15,623
Operating	551	3,285	2,559	235	75	6,705	540	3,034	14,974
Idle	31	52	357	18	3	461	15	57	649
Alaskan Crude Oil Receipts	0	41,803	14,942	568	0	57,313	0	523,301	591,054

^a Represents gross input divided by operable capacity.

Notes: • Totals may not equal sum of components due to independent rounding. • Refer to Appendix A for Refining District descriptions.

Source: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report."

Table 17. Refinery Net Production or Finished Petroleum Products by PAD and Refining Districts, 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Liquefied Refinery Gases	15,041	-23	15,018	28,844	3,365	5,523	37,732
Ethane/Ethylene	1,283	0	1,283	202	0	0	202
Ethylene	W	W	W	W	W	W	W
Ethylene	W	W	W	W	W	W	W
Propane/Propylene	12,962	297	13,259	26,804	2,879	7,083	36,766
Propane	W	W	W	W	W	W	W
Propylene	W	W	W	W	W	W	W
Normal Butane/Butylene	1,380	-253	1,127	1,566	422	-1,555	433
Normal Butane	W	W	W	W	W	W	W
Butylene	W	W	W	W	W	W	W
Isobutane	-584	-67	-651	272	64	-5	331
Finished Motor Gasoline	229,894	13,854	243,748	425,808	63,442	143,810	633,060
Leaded	2,011	592	2,603	3,398	4,538	15,060	22,996
Unleaded	227,883	13,262	241,145	422,410	58,904	128,750	610,064
Finished Aviation Gasoline	155	0	155	682	327	212	1,221
Jet Fuel	34,314	839	35,153	47,378	7,475	17,804	72,657
Naphtha-Type	3,757	836	4,593	1,924	200	3,103	5,227
Kerosene-Type	30,557	3	30,560	45,454	7,275	14,701	67,430
Kerosene	1,785	856	2,641	5,059	498	143	5,700
Distillate Fuel Oil	116,738	11,649	128,387	160,455	29,906	68,461	258,822
Residual Fuel Oil	49,050	994	50,044	20,966	3,307	2,339	26,812
Less than 0.31 percent sulfur	10,108	354	10,462	658	0	55	713
0.31 to 1.00 percent sulfur	25,958	302	26,260	3,472	0	914	4,386
Greater than 1.00 percent sulfur	12,984	338	13,322	16,836	3,307	1,370	21,513
Naphtha for Petrochemical Feedstock Use	4,098	0	4,098	6,251	0	529	6,780
Other Oils for Petrochemical Feedstock Use	146	0	146	7,224	0	852	8,078
Special Naphthas	962	314	1,276	2,363	0	3,264	5,627
Lubricants	4,651	3,398	8,049	5,926	0	2,971	8,897
Naphthenic	2,012	0	2,012	5	0	0	5
Paraffinic	2,639	3,398	6,037	5,921	0	2,971	8,892
Waxes	0	914	914	288	0	272	560
Petroleum Coke	15,073	284	15,357	27,714	6,419	9,433	43,566
Marketable	6,028	0	6,028	15,084	4,594	6,073	25,751
Catalyst	9,045	284	9,329	12,630	1,825	3,360	17,815
Asphalt and Road Oil	30,087	2,849	32,936	36,474	7,477	11,191	55,142
Still Gas	20,974	1,749	22,723	35,629	4,649	11,372	51,650
Miscellaneous Products	2,969	514	3,483	4,110	537	554	5,201
Fuel Use	80	0	80	0	0	0	0
Nonfuel Use	2,889	514	3,403	4,110	537	554	5,201
Total	525,937	38,191	564,128	815,171	127,402	278,730	1,221,303
Processing Gain(-) or Loss(+) ^a	-22,932	-209	-23,141	-38,279	-6,099	-7,190	-51,568

See footnotes at end of table.

Table 17. Refinery Net Production of Finished Petroleum Products by PAD and Refining Districts, Districts, 1990 (Continued)
(Thousand Barrels)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Liquefied Refinery Gases	7,069	64,441	32,394	1,281	1,070	106,255	2,551	20,619	182,175
Ethane/Ethylene	-497	2,891	1,570	0	0	3,964	5	461	5,915
Ethane	W	W	W	W	W	W	W	W	4,096
Ethylene	W	W	W	W	W	W	W	W	1,819
Propane/Propylene	6,947	46,699	26,549	979	729	81,903	2,417	13,281	147,626
Propane	W	W	W	W	W	W	W	W	109,234
Propylene	W	W	W	W	W	W	W	W	38,392
Normal Butane/Butylene	-1,774	13,306	4,064	276	254	16,126	303	6,623	24,612
Normal Butane	W	W	W	W	W	W	W	W	22,737
Butylene	W	W	W	W	W	W	W	W	1,875
Isobutane	2,393	1,545	211	26	87	4,262	-174	254	4,022
Finished Motor Gasoline	111,109	580,845	412,161	21,373	15,080	1,140,568	86,588	435,894	2,539,858
Leaded	8,707	5,350	6,672	21	3,551	24,301	20,748	63,966	134,614
Unleaded	102,402	575,495	405,489	21,352	11,529	1,116,267	65,840	371,928	2,405,244
Finished Aviation Gasoline	1,459	2,047	1,452	0	0	4,958	298	1,906	8,538
Jet Fuel	22,218	128,906	113,254	3,658	4,165	272,201	14,482	148,740	543,233
Naphtha-Type	8,324	14,384	6,608	2,372	3,546	35,234	4,738	15,061	64,853
Kerosene-Type	13,894	114,522	106,646	1,286	619	236,967	9,744	133,679	478,380
Kerosene	404	2,068	4,192	113	0	6,777	52	1,111	16,281
Distillate Fuel Oil	43,760	221,048	185,494	19,665	5,923	475,890	46,312	158,074	1,067,485
Residual Fuel Oil	4,664	77,141	47,730	3,655	225	133,415	3,932	132,573	346,576
Less than 0.31 percent sulfur	1,554	0	9,182	1,012	108	11,856	681	11,886	35,598
0.31 to 1.00 percent sulfur	1,806	17,743	5,719	1,987	117	27,372	669	13,018	71,705
Greater than 1.00 percent sulfur	1,304	59,398	32,829	656	0	94,187	2,582	107,669	239,273
Naphtha for Petrochemical Feedstock Use	1,208	35,549	1,482	0	18	38,257	-108	1,471	50,498
Other Oils for Petrochemical Feedstock Use	1,968	49,827	34,659	0	0	86,454	153	2,757	97,586
Special Naphthas	1,162	8,972	370	1,613	0	12,117	3	983	20,006
Lubricants	385	23,740	7,731	5,188	0	37,044	70	7,101	61,161
Naphthene	385	5,684	0	3,693	0	9,762	0	3,134	14,913
Paraffinic	0	18,056	7,731	1,495	0	27,282	70	3,967	46,248
Waxes	119	1,929	740	781	0	3,569	489	661	6,193
Petroleum Coke	4,020	39,824	43,078	1,658	208	88,788	3,985	49,964	201,660
Marketable	604	18,482	32,835	1,072	0	52,993	1,709	37,493	123,974
Catalyst	3,416	21,342	10,243	586	208	35,795	2,276	12,471	77,686
Asphalt and Road Oil	4,763	10,061	15,004	9,951	1,087	40,866	12,160	22,866	163,970
Still Gas	7,693	61,548	39,017	2,356	911	111,525	7,394	52,243	245,535
Miscellaneous Products	624	6,211	6,088	0	0	12,923	719	1,377	23,703
Fuel Use	12	0	1,189	0	0	1,201	0	-1	1,280
Nonfuel Use	612	6,211	4,899	0	0	11,722	719	1,378	22,423
Total	212,625	1,314,157	944,846	71,292	28,687	2,571,607	179,080	1,038,340	5,574,458
Processing Gain(-) or Loss(+) ^a	-5,824	-70,621	-39,682	-447	-621	-117,195	-3,906	-53,572	-249,382

^a Represents the arithmetic difference between input and production.

W= Withheld to avoid disclosure of individual company data.

Note: Refer to Appendix A for Refining District descriptions.

Source: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report."

Table 18. Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts, 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Crude Oil	12,270	977	13,247	7,852	1,998	2,525	12,375
Petroleum Products	42,679	2,651	45,330	38,633	6,051	13,430	58,114
Pentanes Plus	14	0	14	80	42	139	261
Liquefied Petroleum Gases	1,881	18	1,899	2,613	225	593	3,431
Ethane/Ethylene	15	0	15	1	0	0	1
Propane/Propylene	1,018	2	1,020	1,488	29	53	1,570
Normal Butane/Butylene	634	12	646	867	120	433	1,420
Isobutane	214	4	218	257	76	107	440
Other Hydrocarbons and Alcohol	296	4	300	135	4	48	187
Unfinished Oils	10,992	876	11,868	9,962	493	4,084	14,539
Naphthas and Lighter	2,146	314	2,460	2,425	173	1,143	3,741
Kerosene and Light Gas Oils	2,559	128	2,685	1,291	85	174	1,550
Heavy Gas Oils	5,409	321	5,730	3,474	230	1,899	5,603
Residuum	878	115	993	2,772	5	868	3,645
Motor Gasoline Blending Components	4,092	85	4,177	4,754	611	1,431	6,796
Aviation Gasoline Blending Components	0	0	0	76	0	9	85
Finished Motor Gasoline	8,869	368	9,237	6,407	1,417	2,296	10,120
Leaded	0	22	22	143	107	266	516
Unleaded	8,869	346	9,215	6,264	1,310	2,030	9,604
Finished Aviation Gasoline	11	0	11	75	4	22	101
Jet Fuel	2,507	1	2,508	2,013	256	598	2,867
Naphtha-Type	147	0	147	204	56	143	403
Kerosene-Type	2,360	1	2,361	1,809	200	455	2,464
Kerosene	215	67	282	520	41	181	742
Distillate Fuel Oil	7,870	387	8,257	5,814	1,245	2,231	9,290
Residual Fuel Oil	3,397	57	3,454	1,844	176	153	2,173
Less than 0.31 percent sulfur	1,390	38	1,428	52	0	18	68
0.31 to 1.00 percent sulfur	1,407	19	1,426	358	0	61	419
Greater than 1.00 percent sulfur	600	0	600	1,434	176	76	1,686
Naphtha for Petrochemical Feedstock Use	75	0	75	205	0	52	257
Other Oils for Petrochemical Feedstock Use	4	0	4	0	0	41	41
Special Naphthas	27	37	64	140	0	149	289
Lubricants	377	455	832	732	0	0	732
Waxes	0	55	55	117	0	25	142
Petroleum Coke (Marketable)	749	0	749	491	185	338	1,014
Asphalt and Road Oil	1,205	193	1,398	2,437	1,346	1,020	4,803
Miscellaneous Products	98	48	146	218	6	20	244
Total Stocks, All Oils	54,949	3,628	58,577	46,485	8,049	15,955	70,489

See footnotes at end of table.

Table 18. Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts, 1990 (Continued)
(Thousand Barrels)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Crude Oil	1,054	24,150	15,270	1,225	312	42,011	2,057	24,806	94,496
Petroleum Products	10,653	75,494	47,524	5,155	1,355	140,181	11,510	61,796	316,931
Pentanes Plus	197	178	94	12	27	508	10	7	800
Liquefied Petroleum Gases	1,640	3,773	3,674	45	51	9,183	380	938	15,831
Ethane/Ethylene	69	1,028	0	0	0	1,097	0	0	1,113
Propane/Propylene	872	1,264	1,352	5	4	3,497	95	83	6,265
Normal Butane/Butylene	448	677	1,688	28	41	2,882	198	648	5,794
Isobutane	251	804	634	12	6	1,707	87	207	2,659
Other Hydrocarbons and Alcohol	53	287	160	0	18	518	109	352	1,466
Unfinished Oils	2,307	26,482	16,538	816	202	46,345	1,993	23,924	98,669
Naphthas and Lighter	756	6,918	4,031	210	34	11,949	462	3,585	22,197
Kerosene and Light Gas Oils	248	6,158	3,113	79	30	9,628	363	3,844	18,070
Heavy Gas Oils	820	7,873	5,584	460	138	14,875	697	12,633	39,528
Residuum	483	5,533	3,810	67	0	9,893	481	3,862	18,874
Motor Gasoline Blending Components	1,634	7,999	5,904	135	255	15,927	2,627	7,476	37,003
Aviation Gasoline Blending Components	0	0	68	0	0	68	0	2	155
Finished Motor Gasoline	1,989	10,088	5,302	593	211	18,183	2,019	8,081	47,640
Leaded	260	39	17	1	52	369	522	1,818	3,247
Unleaded	1,729	10,049	5,285	592	159	17,814	1,497	6,263	44,393
Finished Aviation Gasoline	78	283	154	0	0	515	34	146	807
Jet Fuel	700	4,207	3,236	196	209	8,548	568	4,601	19,092
Naphtha-Type	212	620	459	138	141	1,570	217	814	3,151
Kerosene-Type	488	3,587	2,777	58	68	6,978	351	3,787	15,941
Kerosene	26	336	250	15	0	627	7	53	1,711
Distillate Fuel Oil	939	7,915	3,740	1,179	181	13,954	1,785	5,864	39,150
Residual Fuel Oil	287	4,495	3,149	200	24	8,155	484	4,772	19,038
Less than 0.31 percent sulfur	142	0	1,291	4	21	1,458	91	646	3,691
0.31 to 1.00 percent sulfur	51	646	238	129	3	1,067	209	1,090	4,211
Greater than 1.00 percent sulfur	94	3,849	1,620	67	0	5,630	184	3,036	11,136
Naphtha for Petrochemical Feedstock Use	17	854	135	0	3	1,009	0	120	1,461
Other Oils for Petrochemical Feedstock Use	100	1,403	288	0	0	1,791	19	198	2,053
Special Naphthas	93	1,496	16	88	0	1,693	4	100	2,150
Lubricants	19	3,773	911	553	0	5,256	8	1,012	7,840
Waxes	10	275	166	24	0	475	130	175	977
Petroleum Coke (Marketable)	14	573	2,611	395	0	3,593	2	1,823	7,181
Asphalt and Road Oil	528	799	828	904	174	3,233	1,306	2,079	12,819
Miscellaneous Products	22	278	300	0	0	600	25	73	1,088
Total Stocks, All Oils	11,707	99,644	62,794	6,380	1,667	182,192	13,567	86,602	411,427

Notes: Stocks are reported as of the last day of the month. Refer to Appendix A for Refining District descriptions.
Source: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report."

Table 19. Percent Refinery Yield of Petroleum Products by PAD and Refining Districts,^a 1990

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Liquefied Refinery Gases	3.1	-0.1	2.8	3.9	2.9	2.2	3.4
Finished Motor Gasoline ^b	44.3	36.7	43.7	52.5	50.9	49.8	51.7
Finished Aviation Gasoline ^c	0.0	0.0	0.0	0.1	0.3	0.1	0.1
Naphtha-Type Jet Fuel	0.8	2.2	0.9	0.3	0.2	1.2	0.5
Kerosene-Type Jet Fuel	6.2	0.0	5.8	6.1	6.2	5.8	6.1
Kerosene	0.4	2.2	0.5	0.7	0.4	0.1	0.5
Distillate Fuel Oil	23.8	30.6	24.3	21.7	25.4	26.9	23.3
Residual Fuel Oil	10.0	2.6	9.5	2.8	2.8	0.9	2.4
Naphtha for Petrochemical Feedstock Use	0.8	0.0	0.0	0.8	0.0	0.2	0.6
Other Oils for Petrochemical Feedstock Use	0.0	0.0	0.0	1.0	0.0	0.3	0.7
Special Naphthas	0.2	0.8	0.2	0.3	0.0	1.3	0.5
Lubricants	0.9	8.9	1.5	0.8	0.0	1.2	0.8
Waxes	0.0	2.4	0.2	0.0	0.0	0.1	0.1
Petroleum Coke	3.1	0.7	2.9	3.7	5.4	3.7	3.9
Asphalt and Road Oil	6.1	7.5	6.2	4.9	6.3	4.4	5.0
Still Gas	4.3	4.6	4.3	4.8	3.9	4.5	4.6
Miscellaneous Products	0.6	1.3	0.7	0.6	0.5	0.2	0.5
Processing Gain(-) or Loss(+) ^d	-4.7	-0.5	-4.4	-5.2	-5.2	-2.8	-4.6

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total			
	Rocky Mt.	West Coast							
Liquefied Refinery Gases	3.7	5.3	3.8	1.9	4.2	4.5	1.5	2.2	3.6
Finished Motor Gasoline ^b	49.3	45.1	42.9	26.5	49.6	44.2	47.1	42.5	45.6
Finished Aviation Gasoline ^c	0.8	0.2	0.2	0.0	0.0	0.2	0.2	0.2	0.2
Naphtha-Type Jet Fuel	4.4	1.2	0.8	3.5	13.8	1.5	2.8	1.6	1.3
Kerosene-Type Jet Fuel	7.4	9.5	12.4	1.9	2.4	10.1	5.8	14.0	9.4
Kerosene	0.2	0.2	0.5	0.2	0.0	0.3	0.0	0.1	0.1
Distillate Fuel Oil	23.2	18.3	21.5	29.2	23.0	20.2	27.6	16.5	20.0
Residual Fuel Oil	2.5	6.4	5.5	5.4	0.9	5.7	2.3	13.9	6.8
Naphtha for Petrochemical Feedstock Use	0.6	2.9	0.2	0.0	0.1	1.6	-0.1	0.2	1.0
Other Oils for Petrochemical Feedstock Use	1.0	4.1	4.0	0.0	0.0	3.7	0.1	0.3	1.9
Special Naphthas	0.6	0.7	0.0	2.4	0.0	0.5	0.0	0.1	0.4
Lubricants	0.2	2.0	0.9	7.7	0.0	1.6	0.0	0.7	1.2
Waxes	0.1	0.2	0.1	1.2	0.0	0.2	0.3	0.1	0.1
Petroleum Coke	2.1	3.3	5.0	2.5	0.8	3.8	2.4	5.2	3.9
Asphalt and Road Oil	2.5	0.8	1.7	14.8	4.2	1.7	7.3	2.4	3.2
Still Gas	4.1	5.1	4.5	3.5	3.5	4.7	4.4	5.5	4.6
Miscellaneous Products	0.3	0.5	0.7	0.0	0.0	0.5	0.4	0.1	0.5
Processing Gain(-) or Loss(+) ^d	-3.1	-5.8	-4.6	-0.7	-2.4	-5.0	-2.3	-5.6	-4.9

^a Based on crude oil input and net reruns of unfinished oils.

^b Based on total finished motor gasoline output minus net input of motor gasoline blending components, minus input of natural gas plant liquids, other hydrocarbons and alcohol.

^c Based on finished aviation gasoline output minus net input of aviation gasoline blending components.

^d Represents the difference between input and production.

Notes: • Totals may not equal sum of components due to independent rounding. • Refer to Appendix A for Refining District descriptions.

Sources: Calculated from data on Tables 17 and 18.

Table 20. Imports of Crude Oil and Petroleum Products by PAD District, 1990
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts						Daily Average
	I	II	III	IV	V	U.S. Total	
Crude Oil ^{a,b}	441,265	409,783	1,188,027	27,702	84,610	2,151,387	5,894
Natural Gas Liquids							
Pentanes Plus	14,492	28,221	23,827	3,537	1,743	71,820	197
Liquefied Petroleum Gases	1,700	431	276	942	0	3,349	9
Ethane/Ethylene	12,792	27,790	23,551	2,595	1,743	68,471	188
Propane/Propylene	0	1,511	998	0	0	2,509	7
Normal Butane/Butylene	10,973	19,615	9,154	1,217	899	41,858	115
Isobutane	1,739	5,898	9,084	1,040	480	18,241	50
	80	766	4,315	338	364	5,863	16
Other Liquids							
Other Hydrocarbons/Alcohol	63,198	437	107,642	5	2,384	173,666	476
Unfinished Oils ^a	173	0	0	0	0	173	(5)
Naphthas and Lighter	45,029	0	103,906	5	1,868	150,828	413
Kerosene and Light Gas Oils	2,633	0	25,476	5	102	28,216	77
Heavy Gas Oils	0	0	0	0	0	0	0
Residuum	37,786	0	24,484	0	1,282	63,552	174
Motor Gasoline Blending Components	4,610	0	53,946	0	504	59,060	162
Aviation Gasoline Blending Components	17,996	437	3,736	0	496	22,665	62
	0	0	0	0	0	0	0
Finished Petroleum Products	418,315	8,526	78,758	1,355	22,563	529,522	1,451
Finished Motor Gasoline	110,883	2,129	5,173	491	6,003	124,679	342
Leaded	0	0	26	69	301	396	1
Unleaded	110,883	2,129	5,147	422	5,702	124,283	341
Finished Aviation Gasoline	17	1	0	0	32	50	(5)
Jet Fuel	28,254	598	6,138	0	4,387	39,377	108
Naphtha-Type	2,247	568	0	0	25	2,840	8
Kerosene-Type	26,007	30	6,138	0	4,362	36,537	100
Bonded Aircraft Fuel	9,932	30	4,784	0	3,180	17,926	49
Other	16,075	0	1,354	0	1,182	18,611	51
Kerosene	1,223	0	442	0	0	1,665	5
Distillate Fuel Oil	36,227	2,254	630	781	1,583	101,455	278
Bonded Ship Bunkers	343	0	0	14	0	357	1
Other	95,884	2,254	630	747	1,583	101,098	277
Residual Fuel Oil	162,744	906	10,580	99	9,512	183,841	504
Bonded Ship Bunkers	845	0	0	0	0	845	2
Less than 0.31 percent sulfur	0	0	0	0	0	0	0
0.31 to 1.00 percent sulfur	0	0	0	0	0	0	0
Greater than 1.00 percent sulfur	845	0	0	0	0	0	0
Other	161,899	906	10,580	99	9,512	182,996	501
Less than 0.31 percent sulfur	26,553	210	2,532	16	7,013	36,324	100
0.31 to 1.00 percent sulfur	41,398	319	3,747	0	2,499	47,963	131
Greater than 1.00 percent sulfur	93,948	377	4,301	83	0	98,709	270
Naphtha for Petrochemical Feedstock Use	2,976	624	12,957	4	375	16,936	46
Other Oils for Petrochemical Feedstock Use	0	0	39,625	0	0	39,625	109
Special Naphthas	399	1,286	2,406	0	97	4,188	11
Lubricants	3,816	305	93	0	70	4,284	12
Waxes	318	54	18	0	28	418	1
Petroleum Coke	0	0	298	0	433	731	2
Asphalt and Road Oil	10,881	272	396	0	48	11,597	32
Miscellaneous Products	577	97	2	0	0	676	2
Total	937,270	446,967	1,398,254	32,599	111,305	2,926,395	8,018

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

(s) = Less than 500 barrels or less than 500 barrels per day.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 21. Imports of Crude Oil and Petroleum Products into the United States by Country of Origin,^a 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Kerosene	Special Naphthas
Arab OPEC	680,248	12,469	47,743	0	13,465	4,688	6,000	14,536	138	29
Algeria	23,035	9,630	14,117	0	0	0	4,560	11,307	0	29
Iraq	187,485	0	1,432	0	0	0	188	0	0	0
Kuwait	28,942	1,105	1,178	0	0	35	260	0	0	0
Qatar	1,293	0	0	0	0	0	0	0	0	0
Saudi Arabia	436,193	1,734	28,830	0	13,485	4,653	982	2,554	138	0
United Arab Emirates	3,300	0	2,188	0	0	0	0	675	0	0
Other OPEC	602,183	1,189	14,383	3,236	25,463	13,595	41,762	36,231	221	129
Ecuador	13,868	0	61	0	0	0	131	3,653	0	0
Gabon	23,349	0	0	0	0	0	0	105	0	0
Indonesia	35,912	0	883	0	0	0	0	4,125	0	0
Nigeria	286,126	0	0	0	184	0	0	5,648	0	0
Venezuela	242,910	1,189	13,439	3,236	25,279	13,595	41,631	22,699	221	129
Non OPEC	868,956	54,813	88,702	19,429	85,751	21,094	53,693	133,074	1,306	4,000
Angola	86,095	0	0	0	0	0	0	359	0	0
Argentina	3,363	0	1,682	881	1,568	0	1,721	3,960	0	208
Australia	17,307	1,832	0	0	0	0	0	355	0	0
Bahama Islands	0	0	0	0	0	0	208	13,152	0	0
Belgium	0	0	3,381	4,808	2,023	0	0	1,310	0	0
Benin	1,387	0	0	0	0	0	0	0	0	0
Brazil	0	0	59	4	9,048	0	0	8,708	0	21
Brunei	2,633	0	0	0	0	0	0	0	0	0
Cameroon	4,604	0	0	0	0	0	0	0	0	0
Canada	234,516	38,782	4,518	589	19,760	3,659	17,868	12,529	321	2,562
China, People's Republic of	28,161	0	481	481	310	0	0	0	0	0
Colombia	51,041	0	481	0	0	0	183	14,774	0	0
Congo	8,457	0	0	0	0	0	0	1,647	0	0
Denmark	0	0	0	0	0	0	217	190	0	0
Egypt	9,005	0	2,189	0	0	0	0	172	0	0
France	0	40	1,207	278	7,294	296	777	2,959	0	0
Germany, DR (E)	0	0	0	0	0	0	295	265	0	0
Germany, FR (W)	0	0	217	0	0	0	0	0	0	0
Greece	0	0	0	252	1,092	551	847	587	0	0
Guatemala	1,295	0	0	0	0	0	0	0	0	0
India	210	0	5,858	0	0	0	0	298	0	0
Ireland	0	0	344	0	0	0	0	130	0	0
Italy	669	27	7,861	567	8,679	258	185	2,843	0	8
Ivory Coast	0	0	110	0	0	0	0	168	0	0
Japan	0	49	0	0	0	0	0	0	0	0
Korea, Republic of	0	0	0	15	0	0	0	0	0	0
Malaysia	14,749	0	0	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0	117	0	0
Mexico	251,345	13,392	0	996	6	40	0	0	0	88
Netherlands	0	108	8,189	1,035	4,437	3,404	2,789	1,611	0	0
Netherlands Antilles	0	0	509	0	1,425	450	881	1,584	0	1,084
Norway	34,878	0	851	0	744	0	109	8,321	119	0
Oman	13,037	0	618	0	0	0	189	480	0	0
Panama	0	0	0	0	0	0	0	0	0	0
Peru	568	0	0	0	0	0	0	181	0	0
Portugal	0	0	0	0	0	0	0	4,629	0	0
Puerto Rico	0	16	0	42	1,139	0	0	1,828	0	28
Romania	0	0	1,501	2,387	0	1,001	44	199	0	0
Singapore	0	0	0	3,447	966	187	625	0	0	0
Spain	0	0	845	0	231	18	0	3,460	0	0
Sweden	0	0	5,513	138	7,309	1,289	0	1,904	0	0
Syria	813	0	543	0	0	0	0	460	0	0
Thailand	4,120	0	412	0	0	0	0	974	0	0
Trinidad and Tobago	27,803	0	0	0	0	0	0	0	0	0
Tunisia	645	0	0	0	250	220	589	6,154	0	22
Turkey	0	0	1,000	419	0	0	0	179	0	0
United Kingdom	56,497	567	3,735	468	2,768	56	954	3,143	0	1
U.S.S.R.	297	0	10,553	0	124	0	1,856	3,100	160	0
Virgin Islands	0	0	24,580	2,623	16,654	9,554	22,990	25,672	706	0
Yemen	6,993	0	671	0	0	0	0	369	0	0
Yugoslavia	0	0	0	0	0	0	0	0	0	0
Zaire	8,468	0	0	0	0	0	368	0	0	0
Other	0	0	1,475	0	24	111	0	2,421	0	0
Total	2,151,387	68,471	150,828	22,665	124,679	39,377	101,455	183,841	1,665	4,188

See footnotes at end of table.

Table 21. Imports of Crude Oil and Petroleum Products Into the United States by Country of Origin,^a 1990 (Continued)
(Thousand Barrels)

Country of Origin	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total Crude Oil and Products	Daily Average		
								Crude Oil	Products	Total
Arab OPEC	768	39,128	0	0	0	138,964	819,212	1,864	381	2,244
Algeria	768	38,969	0	0	0	79,280	102,315	63	217	280
Iraq	0	0	0	0	0	1,620	189,105	514	4	518
Kuwait	0	0	0	0	0	2,576	31,518	79	7	86
Qatar	0	0	0	0	0	0	1,293	4	0	4
Saudi Arabia	0	259	0	0	0	52,625	488,818	1,195	144	1,339
United Arab Emirates	0	0	0	0	0	2,863	6,163	9	8	17
Other OPEC	2,496	0	0	7,965	28	146,698	748,881	1,650	402	2,052
Ecuador	0	0	0	0	0	3,845	17,731	38	11	49
Gabon	0	0	0	0	0	105	23,454	64	(s)	64
Indonesia	800	0	0	0	0	5,836	41,748	98	16	114
Nigeria	0	0	0	0	28	5,833	291,959	784	16	800
Venezuela	1,696	0	0	7,965	0	131,079	373,989	666	359	1,025
Non OPEC	13,672	497	4,284	3,632	5,369	489,346	1,358,302	2,381	1,341	3,721
Angola	0	0	0	3,632	0	359	86,454	236	1	237
Argentina	15	0	0	0	0	10,300	13,663	9	28	37
Australia	0	0	0	0	267	2,187	19,494	47	6	53
Bahama Islands	0	0	0	0	0	13,360	13,360	0	37	37
Belgium	0	0	0	0	0	11,525	11,525	0	32	32
Benin	0	0	0	0	2	0	1,387	4	0	4
Brazil	0	0	18	0	0	17,874	17,874	0	49	49
Brunei	0	0	0	0	14	0	2,633	7	0	7
Cameroon	0	0	0	0	0	1,640	6,244	13	4	17
Canada	1,077	0	738	1,800	2,141	106,342	340,858	643	291	934
China, People's Republic of	0	0	132	0	31	954	29,115	77	3	80
Colombia	0	0	0	0	5	15,443	66,484	140	42	182
Congo	0	0	0	0	0	1,647	10,104	23	5	28
Denmark	0	0	0	0	0	407	407	0	1	1
Egypt	929	0	0	0	12	3,302	12,307	25	9	34
France	376	0	0	0	0	13,227	13,227	0	36	36
Germany, DR (E)	0	0	0	0	0	560	550	0	2	2
Germany, FR (V)	0	0	0	0	99	316	318	0	1	1
Greece	0	0	0	0	0	3,584	3,564	0	10	10
Guatemala	0	235	0	0	0	0	1,295	4	0	4
India	4,211	0	0	0	0	10,367	10,577	1	28	29
Ireland	0	0	0	0	0	474	474	0	1	1
Italy	0	0	0	0	0	20,537	21,206	2	56	58
Ivory Coast	21	262	0	0	26	272	278	0	1	1
Japan	0	0	0	0	0	277	277	0	1	1
Korea, Republic of	92	0	31	0	97	291	291	0	1	1
Malaysia	276	0	0	0	0	117	14,866	40	(s)	41
Mauntania	0	0	0	0	0	128	128	0	(s)	(s)
Mexico	0	0	0	133	1,918	24,249	275,594	650	66	755
Netherlands	1,710	0	349	0	183	20,010	20,010	0	55	55
Netherlands Antilles	0	0	0	855	0	11,338	11,338	0	31	31
Norway	0	0	0	0	0	2,284	37,142	96	6	102
Oman	0	0	0	0	0	618	13,655	36	2	37
Panama	0	0	0	0	0	181	181	0	(s)	(s)
Peru	0	0	0	0	0	4,629	5,197	2	13	14
Portugal	0	0	0	0	0	2,886	2,886	0	8	8
Puerto Rico	0	33	0	0	0	11,801	11,801	0	32	32
Romania	3,143	0	2,971	0	555	5,125	5,125	0	14	14
Singapore	0	0	0	0	0	4,554	4,554	0	12	12
Spain	0	0	0	844	0	17,116	17,116	0	47	47
Sweden	107	0	12	0	0	1,298	1,298	0	4	4
Syria	295	0	0	0	0	1,386	2,199	2	4	6
Thailand	0	0	0	0	0	0	4,120	11	0	11
Trinidad and Tobago	0	0	0	0	0	7,235	35,038	76	20	96
Tunisia	0	0	0	0	0	179	824	2	(s)	2
Turkey	0	0	0	0	0	1,861	1,861	0	5	5
United Kingdom	832	0	0	0	0	12,524	69,021	155	34	189
U.S.S.R.	321	0	0	0	0	16,114	16,411	1	44	45
Virgin Islands	285	0	0	0	0	103,044	103,044	0	282	282
Yemen	0	0	0	0	0	1,040	8,033	19	3	22
Yugoslavia	0	0	0	0	0	368	368	0	1	1
Zaire	0	0	0	0	0	0	8,468	23	0	23
Other	0	0	0	0	19	4,050	4,050	0	11	11
Total	16,936	39,625	4,284	11,597	5,397	775,008	2,926,395	5,894	2,123	8,018

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.
^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.
^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.
(s) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 22. PAD District I—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Kerosene	Special Naphtha
Arab OPEC	87,969	6,753	4,953	0	11,055	2,822	5,797	10,444	138	0
Algeria	419	5,593	4,953	0	0	0	4,560	9,330	0	0
Iraq	15,670	0	0	0	0	0	188	0	0	0
Kuwait	1,519	0	0	0	0	0	260	0	0	0
Saudi Arabia	70,361	1,160	0	0	11,055	2,622	789	1,114	138	0
Other OPEC	214,658	0	1,030	0	23,905	10,515	41,555	31,055	221	0
Ecuador	7,112	0	0	0	0	0	131	3,471	0	0
Gabon	15,816	0	0	0	0	0	0	105	0	0
Nigeria	147,929	0	0	0	184	0	0	5,649	0	0
Venezuela	43,801	0	1,030	0	23,721	10,515	41,424	21,830	221	0
Non OPEC	138,638	6,039	39,046	17,996	75,923	15,117	48,875	121,247	864	39
Angola	33,914	0	0	0	0	0	0	359	0	0
Argentina	387	0	723	849	1,349	0	1,531	3,482	0	0
Australia	811	0	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	208	12,655	0	0
Belgium	0	0	1,662	4,809	2,023	0	0	760	0	0
Benin	327	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	7,928	0	0	8,708	0	0
Brunei	568	0	0	0	0	0	0	0	0	0
Cameroon	1,678	0	0	0	0	0	0	1,840	0	0
Canada	20,839	5,395	1,006	152	15,319	2,956	13,680	10,930	321	39
China, People's Republic of	5,767	0	0	0	0	0	0	0	0	0
Colombia	4,968	0	0	0	0	0	183	14,531	0	0
Congo	882	0	0	0	0	0	0	1,647	0	0
Denmark	0	0	0	0	0	0	217	190	0	0
Egypt	8,434	0	724	0	0	0	0	172	0	0
France	0	0	904	276	6,794	296	777	2,959	0	0
Germany, DR (E)	0	0	0	0	0	0	295	265	0	0
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	252	1,092	379	847	587	0	0
India	0	0	498	0	0	0	0	0	0	0
Italy	669	0	3,065	449	8,230	258	185	1,957	0	0
Ivory Coast	0	0	110	0	0	0	0	168	0	0
Japan	0	0	0	0	0	0	0	0	0	0
Malaysia	843	0	0	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	40	0	0	0	0
Mexico	28,079	458	0	993	0	451	2,507	905	0	0
Netherlands	0	0	4,038	934	3,901	450	721	1,584	0	0
Netherlands Antilles	0	0	0	0	1,425	0	109	8,040	119	0
Norway	16,423	0	324	0	744	0	189	480	0	0
Panama	0	0	0	0	0	0	0	181	0	0
Peru	0	0	0	0	0	0	0	4,629	0	0
Portugal	0	0	0	16	897	0	0	1,418	0	28
Puerto Rico	0	0	1,501	2,387	0	1,001	44	199	0	0
Romania	0	0	0	3,447	866	187	625	0	0	0
Singapore	0	0	0	0	0	0	0	860	0	0
Spain	0	0	3,181	138	7,031	1,289	0	1,504	0	0
Sweden	0	0	0	0	0	0	0	460	0	0
Syria	0	0	0	0	0	0	0	974	0	0
Trinidad and Tobago	3,216	0	0	0	250	0	589	6,154	0	0
Tunisia	0	0	0	0	0	0	0	179	0	0
Turkey	0	0	201	236	0	0	0	80	0	0
United Kingdom	4,505	186	908	468	2,768	56	954	2,764	0	0
U.S.S.R.	0	0	0	0	124	0	1,856	2,541	160	0
Virgin Islands	0	0	19,867	2,590	15,182	7,643	22,990	25,425	264	0
Yemen	998	0	0	0	0	0	0	0	0	0
Yugoslavia	0	0	0	0	0	0	368	0	0	0
Zaire	5,330	0	0	0	0	0	0	0	0	0
Other	0	0	335	0	0	111	0	2,058	0	0
Total	441,265	12,792	45,029	17,996	110,883	28,254	90,227	162,744	1,223	39

See footnotes at end of table.

Table 22. PAD District I—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990 (Continued)
(Thousand Barrels)

Country of Origin	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total Crude Oil and Products	Daily Average		
								Crude Oil	Products	Total
Arab OPEC	0	0	0	0	0	41,762	1,29,731	241	114	355
Algeria	0	0	0	0	0	24,436	24,855	1	67	68
Iraq	0	0	0	0	0	188	15,858	43	1	43
Kuwait	0	0	0	0	0	260	1,779	4	1	5
Saudi Arabia	0	0	0	0	0	16,878	87,239	193	46	239
Other OPEC	0	0	0	7,725	0	116,006	330,664	568	318	906
Ecuador	0	0	0	0	0	3,602	10,714	19	10	29
Gabon	0	0	0	0	0	105	15,921	43	(s)	44
Nigeria	0	0	0	0	0	5,833	153,762	405	16	421
Venezuela	0	0	0	7,725	0	106,466	150,267	120	292	412
Non OPEC	2,976	0	3,816	3,156	2,785	338,237	476,875	380	927	1,307
Angola	0	0	0	0	0	359	34,273	93	1	94
Argentina	0	0	0	0	0	7,834	8,321	1	22	23
Australia	0	0	0	0	0	0	811	2	0	2
Bahama Islands	0	0	0	0	0	12,863	12,863	0	35	35
Belgium	0	0	0	0	0	9,254	9,254	0	25	25
Benin	0	0	0	0	0	0	327	1	0	1
Brazil	0	0	0	0	0	16,668	16,668	0	46	46
Brunei	0	18	0	0	14	0	568	2	0	2
Cameroon	0	0	0	0	0	1,640	3,318	5	4	9
Canada	166	0	433	1,491	175	52,382	73,221	57	144	201
China, People's Republic of	0	0	0	0	31	31	5,798	16	(s)	16
Colombia	0	0	0	0	0	14,714	19,682	14	40	54
Congo	0	0	0	0	0	1,647	2,529	2	5	7
Denmark	0	0	0	0	0	407	407	0	1	1
Egypt	227	0	0	0	7	1,130	9,564	23	3	26
France	21	0	0	0	0	12,027	12,027	0	33	33
Germany, DR (E)	0	0	0	0	0	560	560	0	2	2
Germany, FR (W)	0	0	0	0	71	71	71	0	(s)	(s)
Greece	0	0	0	0	0	3,157	3,157	0	9	9
India	0	0	0	0	0	498	498	0	1	1
Italy	0	0	0	0	26	14,178	14,847	2	39	41
Ivory Coast	0	0	0	0	0	278	278	0	1	1
Japan	19	0	0	0	19	42	42	0	(s)	(s)
Malaysia	0	0	0	0	0	0	843	2	0	2
Malta	0	0	0	0	0	40	40	0	(s)	(s)
Mexico	0	0	0	0	1,700	7,014	35,093	77	19	96
Netherlands	0	0	349	0	173	12,150	12,150	0	33	33
Netherlands Antilles	0	0	0	821	0	10,514	10,514	0	29	29
Norway	0	0	0	0	0	1,737	18,160	45	5	50
Panama	0	0	0	0	0	181	181	0	(s)	(s)
Peru	0	0	0	0	0	4,629	4,629	0	13	13
Portugal	0	0	33	0	0	2,392	2,392	0	7	7
Puerto Rico	2,363	0	2,971	0	555	11,021	11,021	0	30	30
Romania	0	0	0	0	0	5,125	5,125	0	14	14
Singapore	0	0	0	0	0	660	660	0	2	2
Spain	0	0	12	844	0	13,999	13,999	0	38	38
Sweden	0	0	0	0	0	460	460	0	1	1
Syria	0	0	0	0	0	974	974	0	3	3
Trinidad and Tobago	0	0	0	0	0	6,993	10,209	9	19	28
Tunisia	0	0	0	0	0	179	179	0	(s)	(s)
Turkey	0	0	0	0	0	517	517	0	1	1
United Kingdom	0	0	0	0	0	8,104	12,609	12	22	35
U.S.S.R.	0	0	0	0	0	4,681	4,681	0	13	13
Virgin Islands	180	0	0	0	0	94,141	94,141	0	258	258
Yemen	0	0	0	0	0	0	998	3	0	3
Yugoslavia	0	0	0	0	0	368	368	0	1	1
Zaire	0	0	0	0	0	0	5,330	15	0	15
Other	0	0	0	0	14	2,518	2,518	0	7	7
Total	2,976	0	3,816	10,881	2,785	496,005	937,270	1,209	1,359	2,568

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.
^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.
^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.
(s) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 23. PAD District II—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Kerosene	Special Naphthas
Arab OPEC	81,241	0	0	0	0	20	0	0	0	0
Algeria	5,125	0	0	0	0	0	0	0	0	0
Iraq	24,424	0	0	0	0	0	0	0	0	0
Kuwait	946	0	0	0	0	0	0	0	0	0
Saudi Arabia	50,746	0	0	0	0	20	0	0	0	0
Other OPEC	92,385	0	0	0	0	0	0	0	0	0
Ecuador	2,175	0	0	0	0	0	0	0	0	0
Indonesia	1,680	0	0	0	0	0	0	0	0	0
Nigeria	42,892	0	0	0	0	0	0	0	0	0
Venezuela	45,638	0	0	0	0	0	0	0	0	0
Non OPEC	236,157	27,790	0	437	2,129	578	2,254	906	0	1,286
Cameroon	425	0	0	0	0	0	0	0	0	0
Canada	179,178	27,790	0	437	2,129	568	2,254	906	0	1,286
Colombia	2,404	0	0	0	0	0	0	0	0	0
Egypt	571	0	0	0	0	0	0	0	0	0
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0
Mexico	30,366	0	0	0	0	10	0	0	0	0
Norway	1,462	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	7,722	0	0	0	0	0	0	0	0	0
United Kingdom	9,414	0	0	0	0	0	0	0	0	0
Yemen	4,005	0	0	0	0	0	0	0	0	0
Zaire	610	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
Total	409,783	27,790	0	437	2,129	598	2,254	906	0	1,286

See footnotes at end of table.

Table 23. PAD District II—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990 (Continued)
(Thousand Barrels)

Country of Origin	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total Crude Oil and Products	Daily Average		
								Crude Oil	Products	Total
Arab OPEC	0	0	0	0	0	20	81,261	223	(s)	223
Algeria	0	0	0	0	0	0	5,125	14	0	14
Iraq	0	0	0	0	0	0	24,424	67	0	67
Kuwait	0	0	0	0	0	0	946	3	0	3
Saudi Arabia	0	0	0	0	0	20	50,766	139	(s)	139
Other OPEC	0	0	0	0	0	0	92,385	253	0	253
Ecuador	0	0	0	0	0	0	2,175	6	0	6
Indonesia	0	0	0	0	0	0	1,680	5	0	5
Nigeria	0	0	0	0	0	0	42,892	118	0	118
Venezuela	0	0	0	0	0	0	45,638	125	0	125
Non OPEC	624	0	305	272	583	37,184	273,321	647	102	749
Cameroon	0	0	0	0	0	0	425	1	0	1
Canada	581	0	305	272	559	37,087	216,265	491	102	593
Colombia	0	0	0	0	0	0	2,404	7	0	7
Egypt	0	0	0	0	0	0	571	2	0	2
Germany, FR (W)	0	0	0	0	0	0	22	0	(s)	(s)
Mexico	0	0	0	0	22	22	30,376	83	(s)	83
Norway	0	0	0	0	0	10	1,462	4	0	4
Trinidad and Tobago	0	0	0	0	0	0	7,722	21	0	21
United Kingdom	43	0	0	0	0	43	9,457	26	(s)	26
Yemen	0	0	0	0	0	0	4,005	11	0	11
Zaire	0	0	0	0	0	0	610	2	0	2
Other	0	0	0	0	2	2	2	0	(s)	(s)
Total	624	0	305	272	583	37,184	446,967	1,123	102	1,225

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.
^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.
^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.
(s) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 24. PAD District III—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Kerosene	Special Naphtha
Arab OPEC	505,944	5,718	42,790	0	0	1,202	203	4,092	0	0
Algeria	17,491	4,037	9,164	0	0	0	0	1,917	0	29
Iraq	145,942	0	1,432	0	0	0	0	0	0	20
Kuwait	25,954	1,105	1,178	0	0	0	0	0	0	0
Qatar	1,293	0	0	0	0	0	0	0	0	0
Saudi Arabia	312,979	574	28,830	0	0	1,202	203	1,440	0	0
United Arab Emirates	2,285	0	2,188	0	0	0	0	675	0	0
Other OPEC	261,114	1,189	13,151	3,236	1,558	1,379	207	1,051	0	129
Ecuador	3,276	0	0	0	0	0	0	182	0	0
Gabon	7,533	0	0	0	0	0	0	0	0	0
Indonesia	3,777	0	742	0	0	0	0	0	0	0
Nigeria	95,305	0	0	0	0	0	0	0	0	0
Venezuela	151,223	1,189	12,409	3,236	1,558	1,379	207	869	0	129
Non OPEC	420,969	16,646	47,965	500	3,815	3,557	220	5,437	442	2,248
Angola	52,181	0	0	0	0	0	0	0	0	0
Argentina	2,978	0	565	32	0	0	190	477	0	208
Australia	1,301	1,832	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	0	0	0	0
Belgium	0	0	1,719	0	0	0	0	281	0	0
Benin	1,080	0	0	0	0	0	0	0	0	0
Brazil	0	0	4	4	570	0	0	0	0	0
Cameroon	2,180	0	0	0	0	0	0	0	0	20
Canada	2,948	1,259	3,351	0	0	0	0	0	0	0
China, People's Republic of	16,430	0	0	0	0	0	0	257	0	821
Colombia	43,669	0	481	0	0	0	0	0	0	0
Congo	7,575	0	0	0	0	0	0	0	0	0
Egypt	0	0	1,465	0	0	0	0	0	0	0
France	0	40	303	0	500	0	0	0	0	0
Germany, FR (W)	0	0	217	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	0	0	0	0
Guatemala	1,295	0	0	0	0	0	0	0	0	0
India	210	0	5,360	0	0	0	0	0	0	0
Ireland	0	0	344	0	0	0	0	298	0	0
Italy	0	27	4,596	118	229	0	0	123	0	0
Japan	0	49	0	0	0	0	0	886	0	0
Malaysia	6,474	0	0	0	0	0	0	0	0	4
Mauritania	0	0	0	0	0	0	0	0	0	0
Mexico	187,446	12,934	0	3	6	2,206	30	706	0	96
Netherlands	0	108	4,151	101	536	0	0	0	0	1,084
Netherlands Antilles	0	0	509	0	0	0	0	0	0	0
Norway	16,993	0	527	0	0	0	0	0	0	0
Oman	12,537	0	818	0	0	0	0	0	0	0
Portugal	0	16	0	26	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0
Spain	0	0	2,332	0	278	0	0	400	0	0
Sweden	0	0	543	0	0	0	0	0	0	0
Syria	813	0	412	0	0	0	0	0	0	0
Trinidad and Tobago	16,865	0	0	0	0	0	0	0	0	0
Tunisia	645	0	0	0	0	0	0	0	0	23
Turkey	0	0	799	183	0	0	0	0	0	0
United Kingdom	42,578	381	2,827	0	0	0	0	362	0	0
U.S.S.R.	297	0	10,553	0	0	0	0	203	0	1
Virgin Islands	0	0	4,713	33	1,472	1,351	0	559	0	0
Yemen	1,990	0	671	0	0	0	0	247	442	0
Zaire	2,528	0	0	0	0	0	0	369	0	0
Other	0	0	905	0	24	0	0	269	0	0
Total	1,188,027	23,551	103,906	3,736	5,173	6,138	630	10,580	442	2,408

See footnotes at end of table.

Table 24. PAD District III—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990 (Continued)
(Thousand Barrels)

Country of Origin	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total Crude Oil and Products	Daily Average		
								Crude Oil	Products	Total
Arab OPEC	768	39,128	0	0	0	93,928	599,872	1,386	257	1,643
Algeria	768	38,869	0	0	0	54,844	72,335	48	150	198
Iraq	0	0	0	0	0	1,432	147,374	400	4	404
Kuwait	0	0	0	0	0	2,281	28,235	71	6	77
Qatar	0	0	0	0	0	0	1,293	4	0	4
Saudi Arabia	0	259	0	0	0	32,508	345,487	857	89	947
United Arab Emirates	0	0	0	0	0	2,863	5,148	6	8	14
Other OPEC	2,496	0	0	240	28	24,664	285,778	715	68	783
Ecuador	0	0	0	0	0	182	3,458	9	(3)	9
Gabon	0	0	0	0	0	0	7,533	21	0	21
Indonesia	800	0	0	0	28	1,570	5,347	10	4	15
Nigeria	0	0	0	0	0	0	95,305	261	0	261
Venezuela	1,696	0	0	240	0	22,912	174,135	414	63	477
Non OPEC	9,891	497	93	156	566	91,635	512,604	1,153	201	1,404
Angola	0	0	0	0	0	0	52,181	143	0	143
Argentina	15	0	0	0	267	1,752	4,728	8	5	13
Australia	0	0	0	0	0	1,832	3,133	4	5	9
Bahama Islands	0	0	0	0	0	281	281	0	1	1
Belgium	0	0	0	0	2	1,721	1,721	0	5	5
Benin	0	0	0	0	0	0	1,060	3	0	3
Brazil	0	0	0	0	0	601	601	0	2	2
Cameroon	0	0	0	0	0	0	2,160	6	0	6
Canada	322	0	0	0	0	6,009	8,955	8	16	25
China, People's Republic of	0	0	93	0	0	93	16,523	45	(9)	45
Colombia	0	0	0	0	5	486	44,155	120	1	121
Congo	0	0	0	0	0	0	7,575	21	0	21
Egypt	702	0	0	0	5	2,172	2,172	0	6	6
France	357	0	0	0	0	1,200	1,200	0	3	3
Germany, FR (W)	0	0	0	0	5	222	222	0	1	1
Greece	0	235	0	0	0	235	235	0	1	1
Guatemala	0	0	0	0	0	0	1,295	4	0	4
India	4,211	0	0	0	0	9,869	10,079	1	27	28
Ireland	0	0	0	0	0	467	467	0	1	1
Italy	21	262	0	0	0	6,139	6,139	0	17	17
Japan	23	0	0	0	78	154	154	0	(9)	(9)
Malaysia	0	0	0	0	0	6,474	18	0	18	18
Mauritania	0	0	0	0	0	88	88	0	(9)	(9)
Mexico	0	0	0	122	191	16,198	203,644	514	44	558
Netherlands	1,710	0	0	0	10	7,700	7,700	0	21	21
Netherlands Antilles	0	0	0	34	0	543	543	0	1	1
Norway	0	0	0	0	0	527	17,520	47	1	48
Oman	0	0	0	0	0	618	13,155	34	2	36
Portugal	0	0	0	0	0	42	42	0	(9)	(9)
Puerto Rico	0	0	0	0	0	780	780	0	2	2
Spain	780	0	0	0	0	3,117	3,117	0	9	9
Sweden	107	0	0	0	0	838	838	0	2	2
Syria	295	0	0	0	0	412	1,225	2	1	3
Trinidad and Tobago	0	0	0	0	0	22	16,887	46	(9)	46
Tunisia	0	0	0	0	0	0	645	2	0	2
Turkey	0	0	0	0	0	1,344	1,344	0	4	4
United Kingdom	789	0	0	0	0	4,201	46,779	117	12	129
U.S.S.R.	321	0	0	0	0	11,433	11,730	1	31	32
Virgin Islands	40	0	0	0	0	6,298	8,298	0	23	23
Yemen	0	0	0	0	0	1,040	3,030	5	3	8
Zaire	0	0	0	0	0	0	2,528	7	0	7
Other	0	0	0	0	3	1,201	1,201	0	3	3
Total	12,957	39,625	93	396	594	210,227	1,398,254	3,255	576	3,831

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.
^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.
^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.
(a) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 25. PAD Districts IV and V—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Kerosene	Special Naphtha
PAD District IV										
Non OPEC	27,702	2,595	5	0	491	0	761	99	0	
Canada	27,702	2,595	5	0	491	0	761	99	0	
Total	27,702	2,595	5	0	491	0	761	99	0	
PAD District V										
Arab OPEC	5,094	0	0	0	2,410	844	0	0	0	
Iraq	1,449	0	0	0	0	0	0	0	0	
Kuwait	523	0	0	0	0	35	0	0	0	
Saudi Arabia	2,107	0	0	0	2,410	809	0	0	0	
United Arab Emirates	1,015	0	0	0	0	0	0	0	0	
Other OPEC	34,026	0	202	0	0	1,701	0	4,125	0	
Ecuador	1,323	0	61	0	0	0	0	0	0	
Indonesia	30,455	0	141	0	0	0	0	4,125	0	
Venezuela	2,248	0	0	0	0	1,701	0	0	0	
Non OPEC	45,490	1,743	1,888	496	3,593	1,842	1,583	5,387	0	
Argentina	0	0	394	0	219	0	0	1	0	
Australia	15,195	0	0	0	0	0	0	355	0	
Bahama Islands	0	0	0	0	0	0	0	216	0	
Belgium	0	0	0	0	0	0	0	550	0	
Brazil	0	0	55	0	550	0	0	0	0	
Brunei	2,065	0	0	0	0	0	0	0	0	
Cameroon	341	0	0	0	0	0	0	0	0	
Canada	3,851	1,743	157	0	1,821	135	1,171	337	0	
China, People's Republic of	5,964	0	0	481	310	0	0	0	0	
Colombia	0	0	0	0	0	0	0	243	0	
Germany, FR (W)	0	0	0	0	0	0	0	0	0	
Greece	0	0	0	0	0	172	0	0	0	
Ireland	0	0	0	0	0	0	0	7	0	
Italy	0	0	0	0	220	0	0	0	0	
Japan	0	0	0	0	0	0	0	0	0	
Korea, Republic of	0	0	0	15	0	0	0	0	0	
Malaysia	7,432	0	0	0	0	0	0	117	0	
Mexico	5,454	0	0	0	0	737	252	0	0	
Netherlands	0	0	0	0	0	0	160	0	0	
Netherlands Antilles	0	0	0	0	0	0	0	281	0	
Oman	500	0	0	0	0	0	0	0	0	
Peru	568	0	0	0	0	0	0	0	0	
Portugal	0	0	0	0	242	0	0	210	0	
Singapore	0	0	845	0	231	18	0	2,800	0	
Thailand	4,120	0	0	0	0	0	0	0	0	
Trinidad and Tobago	0	0	0	0	0	220	0	0	0	
United Kingdom	0	0	0	0	0	0	0	176	0	
Virgin Islands	0	0	0	0	0	560	0	0	0	
Other	0	0	235	0	0	0	0	94	0	
Total	84,810	1,743	1,888	496	8,003	4,387	1,583	9,512	0	

See footnotes at end of table.

Table 25. PAD Districts IV and V—Imports of Crude Oil and Petroleum Products by Country of Origin,^a 1990 (Continued)
(Thousand Barrels)

Country of Origin	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total Crude Oil and Products	Daily Average		
								Crude Oil	Products	Total
PAD District IV										
Non OPEC	4	0	0	0	942	4,897	32,599	76	13	89
Canada	4	0	0	0	942	4,897	32,599	76	13	89
Total	4	0	0	0	942	4,897	32,599	76	13	89
PAD District V										
Arab OPEC	0	0	0	0	0	3,254	8,348	14	9	23
Iraq	0	0	0	0	0	0	1,449	4	0	4
Kuwait	0	0	0	0	0	35	558	1	(s)	2
Saudi Arabia	0	0	0	0	0	3,219	5,328	6	9	15
United Arab Emirates	0	0	0	0	0	0	1,015	3	0	3
Other OPEC	0	0	0	0	0	6,028	40,054	93	17	110
Ecuador	0	0	0	0	0	61	1,384	4	(s)	4
Indonesia	0	0	0	0	0	4,266	34,721	83	12	95
Venezuela	0	0	0	0	0	1,701	3,949	6	5	11
Non OPEC	375	0	70	48	493	17,413	62,903	125	48	172
Argentina	0	0	0	0	0	614	614	0	2	2
Australia	0	0	0	0	0	355	15,550	42	1	43
Bahama Islands	0	0	0	0	0	216	216	0	1	1
Belgium	0	0	0	0	0	550	550	0	2	2
Brazil	0	0	0	0	0	605	605	0	2	2
Brunei	0	0	0	0	0	0	2,065	6	0	6
Cameroon	0	0	0	0	0	0	341	1	0	1
Canada	4	0	0	37	485	5,967	9,818	11	16	27
China, People's Republic of	0	0	39	0	0	830	6,794	16	2	19
Colombia	0	0	0	0	0	243	243	0	1	1
Germany, FR (W)	0	0	0	0	1	1	1	0	(s)	(s)
Greece	0	0	0	0	0	172	172	0	(s)	(s)
Ireland	0	0	0	0	0	7	7	0	(s)	(s)
Italy	0	0	0	0	0	220	220	0	1	1
Japan	50	0	31	0	0	81	81	0	(s)	(s)
Korea, Republic of	276	0	0	0	0	291	291	0	1	1
Malaysia	0	0	0	0	0	117	7,549	20	(s)	21
Mexico	0	0	0	0	0	1,027	6,481	15	3	18
Netherlands	0	0	0	11	27	160	160	0	(s)	(s)
Netherlands Antilles	0	0	0	0	0	281	281	0	1	1
Oman	0	0	0	0	0	0	500	1	0	1
Peru	0	0	0	0	0	0	568	2	0	2
Portugal	0	0	0	0	0	452	452	0	1	1
Singapore	0	0	0	0	0	3,894	3,894	0	11	11
Thailand	0	0	0	0	0	0	4,120	11	0	11
Trinidad and Tobago	0	0	0	0	0	220	220	0	1	1
United Kingdom	0	0	0	0	0	176	176	0	(s)	(s)
Virgin Islands	0	0	0	0	0	605	605	0	2	2
Other	45	0	0	0	0	329	329	0	1	1
Total	375	0	70	48	493	26,695	111,305	232	73	305

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.
^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.
^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.
(s) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 26. Imports of Residual Fuel Oil by Sulfur Content and by PAD District and State of Entry, 1990
(Thousand Barrels)

PAD District and State of Entry	Residual Fuel Oil			Total
	Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
PAD District I				
Connecticut	26,553	41,398	94,793	162,744
Delaware	0	802	240	1,042
Florida	0	380	597	957
Georgia	320	3,619	8,814	12,753
Maine	0	0	1,068	1,068
Maryland	97	1,185	7,108	8,390
Massachusetts	0	3,719	8,401	12,120
New Hampshire	676	4,771	17,470	22,917
New Jersey	0	0	1,382	1,382
New York	4,955	8,533	16,936	28,424
North Carolina	18,687	17,165	19,440	55,292
Pennsylvania	79	1	3,678	3,758
Rhode Island	1,385	1,835	2,172	5,392
South Carolina	0	96	0	96
Vermont	93	104	1,782	1,979
Virginia	0	0	41	41
	261	1,208	5,664	7,133
PAD District II				
Illinois	210	319	377	906
Indiana	0	0	58	58
Michigan	0	0	102	102
Minnesota	210	0	1	211
North Dakota	0	7	13	20
Ohio	0	262	203	465
	0	50	0	50
PAD District III				
Alabama	2,532	3,747	4,301	10,580
Louisiana	0	247	271	518
Mississippi	514	144	1,293	1,951
Texas	0	86	0	86
	2,018	3,270	2,737	8,025
PAD District IV				
Idaho	16	0	83	99
Montana	9	0	83	92
	7	0	0	7
PAD District V				
California	7,013	2,499	0	9,512
Hawaii	5,212	1,452	0	6,664
Washington	1,801	828	0	2,629
	0	219	0	219
U.S. Total	36,324	47,963	99,554	183,841

Source: Energy Information Administration (EIA) Form EIA-814, "Monthly Imports Report."

Table 27. Exports of Crude Oil and Petroleum Products by PAD District, 1990
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts						Daily Average
	I	II	III	IV	V	U.S. Total	
Crude Oil ^a	11	3,961	0	2	35,679	39,653	109
Natural Gas Liquids							
Pentanes Plus	977	3,933	6,633	54	3,427	15,024	41
Liquefied Petroleum Gases	23	0	543	0	22	587	2
Ethane/Ethylene	955	3,933	6,090	54	3,405	14,437	40
Propane/Propylene	28	(s)	0	0	3	31	(s)
Normal Butane/Butylene	355	2,312	4,145	21	3,350	10,182	28
Isobutane	573	1,621	1,946	33	52	4,174	12
	0	0	0	0	0	0	0
Finished Petroleum Products							
Finished Motor Gasoline	19,432	6,754	127,328	448	104,031	257,994	707
Naphtha-Type Jet Fuel	1,328	714	15,612	5	2,569	20,228	55
Kerosene-Type Jet Fuel	(s)	6	321	(s)	1,167	1,495	4
Kerosene	1,270	656	8,036	(s)	4,286	14,248	39
Distillate Fuel Oil	71	42	1,675	0	197	1,985	5
Residual Fuel Oil	5,465	478	26,292	1	7,697	39,933	109
Naphtha for Petrochemical Feedstock Use	5,257	653	19,564	272	51,427	77,173	211
Other Oils for Petrochemical Feedstock Use	232	5	1,346	0	74	1,657	5
Special Naphthas	0	0	4,989	0	2,744	7,733	21
Lubricants	119	156	2,202	2	1,305	3,784	10
Waxes	2,155	497	3,269	55	1,180	7,155	20
Petroleum Coke	91	47	327	1	177	642	2
Asphalt and Road Oil	3,053	3,035	43,242	102	30,775	80,207	220
Miscellaneous Products	275	458	54	10	257	1,055	3
	115	8	399	(s)	176	699	2
Total	20,420	14,648	133,961	504	143,138	312,671	857

^a Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.
(s) = Less than 500 barrels or less than 500 barrels per day.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and the U.S. Bureau of the Census.

Table 28. Exports of Crude Oil and Petroleum Products by Destination, 1990
(Thousand Barrels)

Destination	Crude Oil ^a	Pentanes Plus	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Naphtha for Petrochemical Feedstock Use
Argentina	0	0	(s)	0	0	0	0	0	6
Australia	0	3	5	36	0	4	716	1,579	66
Bahama Islands	0	0	43	591	380	0	2,630	5,449	(s)
Bahrain	0	0	0	0	0	0	3	0	(s)
Belgium & Luxembourg	0	139	126	1	0	2	142	1	212
Brazil	0	0	1	2	18	0	0	0	66
Cameroon	0	0	0	0	0	(s)	0	0	0
Canada	3,974	0	4,410	2,093	4,511	90	2,412	7,637	17
Chile	0	(s)	1	53	0	0	368	0	9
China, Taiwan	392	1	144	502	0	9	1,608	8,518	29
Colombia	0	0	132	100	0	0	(s)	0	6
Costa Rica	0	0	1	474	84	0	901	0	21
Denmark	0	0	4	0	0	0	314	0	(s)
Dominican Republic	0	0	458	172	28	0	387	587	6
Ecuador	0	0	(s)	21	11	0	6	3	6
Egypt	0	0	(s)	0	0	0	1	1	(s)
El Salvador	0	0	32	307	43	0	262	0	2
Finland	0	0	76	0	0	(s)	1	0	0
France	0	0	252	743	0	0	957	315	20
French Pacific Islands	0	0	0	0	0	0	(s)	1,231	0
Germany, FR (W)	0	0	227	4	0	3	1	59	31
Ghana	0	0	0	0	0	0	0	0	0
Greece	0	0	2	3	0	0	565	30	1
Guatemala	0	0	90	1,723	162	11	2,276	1	4
Honduras	0	0	29	35	0	18	54	(s)	21
Hong Kong	0	7	(s)	0	(s)	0	15	278	2
India	0	0	1	0	1,554	260	202	0	20
Indonesia	0	0	0	0	0	0	0	(s)	(s)
Israel	0	0	7	242	784	1	70	213	1
Italy	0	0	182	0	0	6	2,767	681	20
Ivory Coast	0	0	0	0	0	0	0	0	0
Jamaica	0	9	118	217	165	1	915	6,355	3
Japan	0	8	30	459	5,190	534	2,697	5,991	304
Korea, Republic of	0	2	16	1	1,533	997	1,929	14,388	120
Kuwait	0	0	0	0	0	0	1	0	(s)
Lebanon	0	0	0	0	0	0	330	60	0
Liberia	0	0	0	0	0	0	0	0	0
Malaysia	0	0	(s)	0	0	1	0	80	2
Malta	0	0	0	0	0	0	0	0	0
Mexico	0	392	7,079	7,380	3	38	394	14,976	77
Netherlands	0	0	33	2,733	881	(s)	5,448	372	228
Netherlands Antilles	0	0	(s)	140	27	1	1,761	1,188	(s)
New Zealand	0	1	(s)	651	0	0	165	0	1
Nigeria	0	0	0	0	0	0	0	0	(s)
Norway	0	0	2	(s)	0	1	(s)	(s)	(s)
Panama	0	0	44	119	47	0	1,492	2,519	17
Peru	0	2	0	0	290	0	326	321	(s)
Philippines	0	0	1	0	0	0	(s)	108	3
Puerto Rico	2,471	18	172	218	0	3	113	109	179
Saudi Arabia	0	1	1	0	0	0	7	(s)	13
Singapore	0	2	3	391	0	0	2,123	2,195	13
South Africa	0	0	0	0	0	1	(s)	0	0
Spain	0	0	0	0	0	0	2,278	476	15
Suriname	0	0	138	0	0	0	0	0	(s)
Sweden	0	(s)	(s)	(s)	0	3	1	(s)	1
Switzerland	0	0	45	1	0	(s)	0	0	0
Thailand	0	0	65	34	0	(s)	0	55	21
Trinidad and Tobago	0	0	1	0	(s)	0	2	140	0
Turkey	0	0	32	0	0	0	(s)	(s)	1
United Arab Emirates	0	0	0	(s)	0	0	7	0	1
United Kingdom	0	2	91	235	0	0	158	405	1
U.S.S.R.	0	0	0	0	0	0	(s)	0	0
Uruguay	0	0	(s)	0	0	0	187	131	0
Venezuela	0	0	147	215	0	0	1,545	334	1
Virgin Islands	32,818	0	(s)	0	0	3	2	0	0
Yugoslavia	0	0	0	0	0	0	0	0	58
Other	0	1	129	333	31	0	1,186	90	9
Total	39,653	587	14,437	20,228	15,744	1,985	39,933	77,173	1,657

See footnotes at end of table.

Table 28. Exports of Crude Oil and Petroleum Products by Destination, 1990 (Continued)
(Thousand Barrels)

Destination	Other Oils for Petrochemical Feedstock Use	Special Naphthas	Lubricants	Waxes	Petroleum Coke	Asphalt and Road Oil	Miscellaneous Products	Crude Oil and Products	
								Total	Daily Average
Argentina	270	(s)	90	1	2				
Australia	243	91	107	10	3,092	(s)	(s)	370	1
Bahama Islands	0	0	26	0	0	2	3	5,957	16
Bahrain	0	(s)	1	0	586	10	2	9,131	25
Belgium & Luxembourg	0	26	128	4	6,450	0	0	590	2
Brazil	0	(s)	139	4	307	13	24	7,268	20
Cameroon	0	0	(s)	0	7	1	1	558	2
Canada	0	342	1,568	108	5,377	0	0	76	(s)
Chile	0	(s)	101	4	5	770	26	33,337	91
China, Taiwan	0	1	335	13	41	(s)	4	545	1
Colombia	0	(s)	114	1	2	4	37	11,633	32
Costa Rica	0	19	93	2	2	(s)	2	358	1
Denmark	0	2	1	2	(s)	0	2	1,598	4
Dominican Republic	0	3	52	1	394	1	(s)	719	2
Ecuador	0	(s)	27	2	0	(s)	1	1,702	5
Egypt	0	0	10	(s)	0	(s)	1	77	(s)
El Salvador	0	5	27	(s)	0	(s)	(s)	13	(s)
Finland	0	0	18	(s)	0	(s)	(s)	679	2
France	1,852	(s)	21	(s)	334	0	2	433	1
French Pacific Islands	0	(s)	2	26	1,936	20	89	6,032	17
Germany, FR (W)	112	2	60	86	909	46	(s)	1,234	3
Ghana	0	0	1	0	372	0	6	1,545	4
Greece	0	1	7	0	0	0	0	373	1
Guatemala	0	21	53	(s)	1,386	0	59	2,075	6
Honduras	0	10	42	3	0	(s)	2	4,347	12
Hong Kong	0	2	20	5	0	0	(s)	209	1
India	0	(s)	81	4	(s)	0	4	334	1
Indonesia	0	1	24	1	(s)	2	13	2,140	6
Israel	0	4	19	1	200	1	23	250	1
Italy	702	5	13	(s)	867	0	2	2,211	6
Ivory Coast	0	0	5	6	12,903	6	75	17,389	48
Jamaica	0	0	5	0	0	0	0	5	(s)
Japan	932	4	47	1	91	0	0	5	(s)
Korea, Republic of	1,462	827	460	42	91	0	3	7,928	22
Kuwait	0	26	152	9	16,142	83	42	33,741	92
Lebanon	0	0	9	804	0	2	65	21,804	60
Liberia	0	0	11	(s)	0	0	(s)	11	(s)
Malaysia	0	0	1	0	355	(s)	1	758	2
Malta	209	(s)	0	7	0	0	(s)	1	(s)
Mexico	0	0	(s)	0	17	0	2	327	1
Netherlands	6	20	1,266	156	0	0	(s)	(s)	(s)
Netherlands Antilles	693	948	76	9	769	31	36	32,623	89
New Zealand	0	0	260	1	8,016	10	92	19,540	54
Nigeria	0	(s)	14	3	7	2	(s)	3,387	9
Norway	0	0	7	491	1	1	(s)	1,357	4
Panama	0	0	6	(s)	0	1	3	11	(s)
Peru	0	4	161	(s)	690	0	(s)	700	2
Philippines	0	1	128	(s)	0	(s)	1	4,403	12
Puerto Rico	119	0	40	(s)	1	(s)	(s)	1,129	3
Saudi Arabia	0	662	213	12	(s)	(s)	2	278	1
Singapore	0	1	36	(s)	0	(s)	15	4,182	11
South Africa	344	7	149	3	48	9	8	68	(s)
Spain	0	(s)	1	(s)	562	2	21	5,308	15
Suriname	535	1	38	52	8,623	3	(s)	587	2
Sweden	0	0	5	0	0	3	1	12,022	33
Switzerland	0	1	13	0	0	(s)	1	144	(s)
Thailand	0	0	7	1	295	(s)	1	316	1
Trinidad and Tobago	293	(s)	42	(s)	8	1	(s)	61	(s)
Turkey	0	(s)	3	1	0	0	5	517	1
United Arab Emirates	0	0	14	(s)	2	(s)	1	149	(s)
United Kingdom	0	(s)	42	(s)	2,972	0	0	3,020	8
U.S.S.R.	160	481	196	47	440	(s)	(s)	490	1
Uruguay	0	6	322	0	2,064	13	11	3,863	11
Venezuela	0	0	12	(s)	519	0	0	847	2
Virgin Islands	0	6	51	4	0	0	(s)	330	1
Yugoslavia	0	9	2	(s)	852	3	3	3,162	9
Other	0	0	(s)	(s)	0	0	(s)	32,833	90
Total	7,733	3,784	7,155	642	764	8	5	2,737	7

* Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.
(s) = Less than 500 barrels or less than 500 barrels per day.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and the U.S. Bureau of Economic Census.

Table 29. Net Imports of Crude Oil and Petroleum Products into the United States by Country, 1990
(Thousand Barrels per Day)

Country	Crude Oil ^a	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Petroleum Coke	Lubricants	Other Products ^b	Total Products	Total Crude and Products
Arab OPEC	1,864	34	37	13	16	40	-1	(s)	240	379	2,243
Algeria	63	26	0	0	12	31	0	(s)	147	217	280
Iraq	514	0	0	0	1	0	0	(s)	4	4	518
Kuwait	79	3	0	(s)	1	0	0	(s)	3	7	86
Qatar	4	(s)	0	0	(s)	0	(s)	(s)	(s)	(s)	(s)
Saudi Arabia	1,195	5	5	13	3	7	(s)	(s)	80	144	1,339
United Arab Emirates	9	0	(s)	0	(s)	2	-1	(s)	6	7	16
Other OPEC	1,650	3	69	37	110	98	-3	(s)	78	392	2,042
Ecuador	38	(s)	(s)	(s)	(s)	10	0	(s)	(s)	10	48
Gabon	64	0	0	0	0	(s)	0	(s)	(s)	(s)	64
Indonesia	98	0	0	0	0	11	(s)	(s)	5	15	114
Iran	0	0	0	0	0	0	(s)	(s)	0	(s)	(s)
Nigeria	784	0	1	0	0	15	0	(s)	(s)	16	800
Venezuela	666	3	69	37	110	61	-2	(s)	73	350	1,016
Non OPEC	2,272	111	180	15	42	154	-213	-7	322	604	2,876
Angola	236	(s)	0	0	0	1	0	(s)	(s)	1	237
Argentina	9	(s)	4	0	5	11	(s)	(s)	7	27	36
Australia	47	5	(s)	0	-2	-3	-8	(s)	-1	-10	37
Bahama Islands	0	(s)	-2	-1	-7	21	0	(s)	(s)	12	12
Belgium & Luxembourg	0	(s)	6	0	(s)	4	-18	(s)	21	12	47
Brazil	0	(s)	25	(s)	0	24	-1	(s)	(s)	4	17
Cameroon	13	0	0	0	0	4	(s)	(s)	(s)	4	17
Canada	632	94	48	-2	42	13	-14	-2	31	211	843
China, People's Republic of	77	0	1	0	(s)	(s)	0	(s)	1	3	80
China, Taiwan	-1	(s)	-1	0	-4	-23	(s)	-1	(s)	-31	-32
Colombia	140	(s)	(s)	0	1	40	(s)	(s)	1	41	181
Congo	23	0	0	0	0	5	0	(s)	(s)	5	28
Egypt	25	(s)	0	0	(s)	(s)	0	(s)	9	9	34
Finland	0	(s)	0	0	(s)	0	-1	(s)	(s)	-1	-1
France	0	-1	18	1	(s)	7	-5	(s)	(s)	20	26
Greece	0	(s)	3	2	1	2	-4	(s)	1	4	4
Guatemala	4	(s)	-5	(s)	-6	(s)	0	(s)	(s)	-12	-8
India	1	(s)	0	-4	-1	1	0	(s)	(s)	27	23
Italy	2	(s)	24	1	-7	6	-35	(s)	21	9	10
Jamaica	0	(s)	-1	(s)	-3	-17	(s)	(s)	(s)	-21	-21
Japan	0	(s)	-1	-14	-7	-16	-44	-1	-7	-92	-92
Korea, Republic of	0	(s)	(s)	-4	-5	-39	-2	(s)	-7	-59	-59
Malaysia	40	(s)	0	0	0	(s)	(s)	(s)	-1	-1	40
Mexico	689	17	-20	9	7	-37	-2	-3	6	-23	666
Netherlands	0	(s)	5	-1	-13	3	-22	1	28	1	1
Netherlands Antilles	0	(s)	4	(s)	-5	20	(s)	-1	4	22	22
Norway	96	(s)	2	0	1	1	-2	(s)	2	4	100
Oman	36	0	0	0	0	0	0	(s)	2	2	37
Panama	0	(s)	(s)	(s)	-4	-6	0	(s)	(s)	-12	-12
Peru	2	(s)	0	-1	-1	12	(s)	(s)	(s)	10	11
Puerto Rico	-7	(s)	-1	3	(s)	(s)	0	8	18	28	21
Romania	0	0	2	1	2	0	0	0	9	14	14
Singapore	0	(s)	(s)	(s)	-6	3	(s)	(s)	1	-2	-2
Spain	0	0	20	4	-6	4	-24	(s)	16	14	14
Syria	2	0	0	0	(s)	3	0	(s)	1	4	6
Thailand	11	(s)	(s)	0	0	(s)	0	(s)	-1	-1	10
Trinidad and Tobago	76	(s)	1	1	2	16	(s)	(s)	(s)	19	96
United Kingdom	155	1	7	(s)	2	0	-6	-1	12	24	179
U.S.S.R.	1	0	(s)	0	5	8	-1	-1	30	42	43
Virgin Islands	-90	(s)	46	26	63	70	0	(s)	77	282	190
Zaire	23	0	0	0	(s)	0	0	(s)	(s)	(s)	23
Other	6	-3	-3	-2	-15	8	-16	-2	6	-28	-23
Total	5,786	148	262	65	169	292	-218	-8	641	1,375	7,161

^a Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^b Includes asphalt and road oil, aviation gasoline, aviation gasoline blending components, kerosene, miscellaneous products, motor gasoline blending components, naphtha for petrochemical feedstock use, other oils for petrochemical feedstock use, pentanes plus, special naphthas, unfinished oils, and waxes.

(s) = Less than 500 barrels per day.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report," EIA-814, "Monthly Imports Report" and the U.S. Bureau of the Census.

Table 30. Stocks of Crude Oil and Petroleum Products by PAD District, 1990
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Crude Oil						
Refinery	14,520	68,367	737,143	12,032	76,325	908,387
Tank Farms and Pipelines	13,247	12,375	42,011	2,057	24,806	94,496
Leases	1,251	54,689	93,871	8,949	34,483	193,243
Strategic Petroleum Reserve	22	1,303	15,569	1,026	1,023	18,943
Alaskan In Transit	0	0	585,692	0	0	585,692
	0	0	0	0	18,013	18,013
Total Stocks, All Oils (excluding Crude Oil)	182,841	163,018	255,631	17,208	93,548	712,248
Refinery	15,330	58,114	140,181	11,510	61,796	316,931
Bulk Terminal	107,889	67,508	68,679	2,878	25,950	272,904
Pipeline	25,447	34,897	42,559	2,612	5,688	115,203
Natural Gas Processing Plant	175	2,499	4,212	208	114	7,208
Pentanes Plus	45	2,126	3,757	158	44	6,130
Refinery	14	261	508	10	7	800
Bulk Terminal	23	1,040	1,314	0	4	2,381
Pipeline	0	538	878	69	13	1,498
Natural Gas Processing Plant	8	287	1,057	79	20	1,451
Liquefied Petroleum Gases	6,392	31,011	56,805	1,029	2,671	97,908
Refinery	1,899	3,431	9,183	380	938	15,831
Bulk Terminal	2,386	18,203	37,598	57	1,639	59,883
Pipeline	1,940	7,165	6,889	463	0	16,437
Natural Gas Processing Plant	167	2,212	3,155	129	94	5,757
Ethane/Ethylene	16	5,530	14,154	174	0	19,674
Refinery	15	1	1,097	0	0	1,113
Bulk Terminal	1	3,349	9,693	0	0	13,043
Pipeline	0	1,501	2,598	168	0	4,267
Natural Gas Processing Plant	0	679	768	6	0	1,451
Propane/Propylene	4,990	17,881	24,813	387	644	48,915
Refinery	1,020	1,570	3,497	95	83	6,265
Bulk Terminal	1,990	11,494	17,406	57	685	31,632
Pipeline	1,870	3,982	2,946	172	0	8,970
Natural Gas Processing Plant	110	835	964	63	78	2,048
Normal Butane/Butylene	1,160	5,121	11,138	328	1,574	19,321
Refinery	646	1,420	2,882	198	648	5,794
Bulk Terminal	391	2,131	6,447	0	913	9,882
Pipeline	70	1,181	831	81	0	2,163
Natural Gas Processing Plant	53	389	978	49	13	1,482
Isobutane	226	2,479	6,700	140	253	9,798
Refinery	218	440	1,707	87	207	2,659
Bulk Terminal	4	1,229	4,052	0	41	5,328
Pipeline	0	501	494	42	0	1,037
Natural Gas Processing Plant	4	309	447	11	5	776
Other Hydrocarbons/Alcohol	300	187	518	109	352	1,466
Refinery	300	187	518	109	352	1,466
Unfinished Oils	11,868	14,539	46,345	1,993	23,924	98,669
Refinery	2,460	3,741	11,949	462	3,585	22,197
Naphtha and Lighter	2,685	1,550	5,628	363	3,844	18,070
Kerosene and Light Gas Oils	5,730	5,603	14,875	687	12,633	39,528
Heavy Gas Oils	993	3,645	9,893	481	3,862	18,874
Residuum						
Motor Gasoline Blending Components	4,234	7,623	16,917	2,703	7,535	39,012
Refinery	4,177	6,796	15,927	2,627	7,476	37,003
Bulk Terminal	57	648	990	78	17	1,788
Pipeline	0	179	0	0	42	221

See footnotes at end of table.

Table 30. Stocks of Crude Oil and Petroleum Products by PAD District, 1990 (Continued)
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Aviation Gasoline Blending Components	0	85	68	0	2	155
Refinery	0	85	68	0	2	155
Finished Motor Gasoline	54,511	47,678	49,461	4,837	23,734	180,821
Refinery	9,237	10,120	18,183	2,019	8,081	47,640
Bulk Terminal	31,183	22,408	11,313	1,593	12,785	79,282
Pipeline	14,491	15,150	19,965	1,225	2,868	53,690
Finished Leaded Motor Gasoline	100	2,400	851	1,247	5,351	9,940
Refinery	22	516	369	522	1,818	3,247
Bulk Terminal	78	910	208	433	3,192	4,821
Pipeline	0	974	274	292	341	1,881
Finished Unleaded Motor Gasoline	54,811	45,278	48,610	3,590	18,383	170,672
Refinery	9,215	9,604	17,814	1,497	6,263	44,393
Bulk Terminal	31,105	21,498	11,105	1,160	9,593	74,461
Pipeline	14,491	14,176	19,691	933	2,527	51,818
Finished Aviation Gasoline	206	557	579	55	352	1,749
Refinery	11	101	515	34	146	807
Bulk Terminal	195	380	64	21	206	666
Pipeline	0	76	0	0	0	76
Naphtha-Type Jet Fuel	528	984	2,245	374	2,034	6,165
Refinery	147	403	1,570	217	814	3,151
Bulk Terminal	334	248	190	0	708	1,480
Pipeline	47	333	485	157	512	1,534
Kerosene-Type Jet Fuel	13,064	9,748	15,651	645	6,817	45,925
Refinery	2,361	2,464	6,978	351	3,787	15,941
Bulk Terminal	5,624	4,425	2,568	166	2,101	14,884
Pipeline	5,079	2,859	6,105	128	929	15,100
Kerosene	2,757	1,570	1,144	25	80	5,578
Refinery	282	742	627	7	53	1,711
Bulk Terminal	2,192	533	232	18	21	2,996
Pipeline	283	295	285	0	6	869
Distillate Fuel Oil	55,587	32,706	28,151	3,273	12,487	132,204
Refinery	8,257	9,290	13,954	1,785	5,864	39,150
Bulk Terminal	39,723	15,170	6,247	918	5,476	67,534
Pipeline	7,607	8,246	7,950	570	1,147	25,520
Residual Fuel Oil^a	23,274	3,332	14,383	484	7,088	48,561
Refinery	3,454	2,173	8,155	484	4,772	19,038
Bulk Terminal	19,820	1,159	6,228	0	2,145	29,352
Pipeline	0	0	0	0	171	171
Less than 0.31% Sulfur	6,509	226	1,000	91	735	8,161
Refinery	1,428	68	1,458	91	646	3,691
Bulk Terminal	5,081	158	142	0	89	5,470
0.31 to 1.00% Sulfur	8,289	875	3,745	209	1,466	14,584
Refinery	1,426	419	1,067	209	1,090	4,211
Bulk Terminal	6,863	456	2,678	0	376	10,373
Greater than 1.00% Sulfur	8,476	2,231	9,038	184	4,716	24,645
Refinery	800	1,686	5,630	184	3,036	11,136
Bulk Terminal	7,876	545	3,408	0	1,680	13,509
Naphtha for Petrochemical Feedstock Use	75	257	1,009	0	120	1,461
Refinery	75	257	1,009	0	120	1,461

See footnotes at end of table.

Table 30. Stocks of Crude Oil and Petroleum Products by PAD District, 1990 (Continued)
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Other Oils for Petrochemical Feedstock Use						
Refinery	4	41	1,791	19	198	2,053
	4	41	1,791	19	198	2,053
Special Naphthas						
Refinery	607	484	1,806	4	108	3,009
Bulk Terminal	64	289	1,693	4	100	2,150
	543	195	113	0	8	859
Lubricants						
Refinery	3,009	1,758	5,862	8		
Bulk Terminal	832	732	5,256	8	1,736	12,373
	2,177	1,026	608	0	1,012	7,840
Waxes						
Refinery	55	142	475	130	175	977
	55	142	475	130	175	977
Petroleum Coke						
Refinery	749	1,014	3,593	2	1,823	7,181
	749	1,014	3,593	2	1,823	7,181
Asphalt and Road Oil						
Refinery	4,491	6,859	3,868	1,335	2,179	18,732
Bulk Terminal	1,398	4,803	3,233	1,306	2,079	12,819
	3,093	2,056	635	29	100	5,913
Miscellaneous Products						
Refinery	685	317	1,203	25	89	2,319
Bulk Terminal	146	244	600	25	73	1,088
Pipeline	539	17	581	0	16	1,153
	0	56	22	0	0	78
Total Stocks, All Oils	197,361	231,385	992,774	29,240	169,873	1,620,633

* Sulfur content not available for stocks held by pipelines.
Note: Stocks are reported as of the last day of the month.

Sources: Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," and EIA-816, "Monthly Natural Gas Liquids Report."

Table 31. Refinery, Bulk Terminal, and Natural Gas Plant Stocks of Selected Petroleum Products by PAD District and State, 1990
(Thousand Barrels)

PAD District and State	Leaded Motor Gasoline	Unleaded Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Propane Propylene
PAD District I						
Connecticut	100	40,320	2,474	47,980	23,274	
Delaware, D.C., Maryland	0	1,873	80	2,718	394	
Florida	41	2,338	98	4,278	2,928	
Georgia	0	5,579	87	2,392	1,115	
Maine, New Hampshire, Vermont	3	2,641	114	1,463	281	
Massachusetts	0	1,091	283	2,253	609	
New Jersey	0	2,146	121	2,180	1,124	
New York	1	7,557	65	12,755	8,967	
North Carolina	3	4,551	431	7,798	5,244	
Pennsylvania	14	2,393	272	1,707	166	
Rhode Island	4	4,858	488	5,257	1,237	
South Carolina	0	530	W	1,099	W	
Virginia	0	1,857	158	1,074	W	
West Virginia	12	3,201	186	2,910	618	
	22	107	W	98	W	
PAD District II						
Illinois	1,426	31,102	1,275	24,460	3,332	13,899
Indiana	178	6,388	307	4,984	1,465	1,203
Iowa	257	3,925	94	3,413	379	W
Kansas, Nebraska	100	1,363	W	1,385	W	W
Kentucky	337	1,985	21	2,080	58	8,240
Michigan	10	1,425	93	911	W	W
Minnesota	87	3,197	108	1,877	135	1,749
Missouri	168	1,549	W	1,343	166	W
North Dakota, South Dakota	151	1,224	W	842	W	W
Ohio	62	748	W	895	W	W
Oklahoma	4	3,797	355	2,288	199	W
Tennessee	61	1,599	W	1,452	295	900
Wisconsin	0	2,067	75	1,286	373	W
	13	1,839	W	1,728	30	W
PAD District III						
Alabama	577	28,919	859	20,201	14,383	21,807
Arkansas	0	1,501	81	912	488	153
Louisiana	2	820	W	367	W	W
Mississippi	10	6,210	259	3,994	5,278	3,009
New Mexico	8	2,237	12	2,388	W	3,280
Texas	145	408	W	378	24	W
	412	17,945	503	12,184	8,243	15,274
PAD District IV						
Colorado	955	2,657	25	2,703	484	215
Idaho	172	852	W	462	W	W
Montana	151	183	W	250	W	W
Utah	338	608	W	713	68	19
Wyoming	116	330	W	422	177	125
	180	704	W	858	W	37
PAD District V						
Alaska	5,010	15,856	74	11,340	6,917	844
Arizona	256	866	W	1,172	W	W
California	292	635	W	235	W	W
Hawaii	2,504	10,099	54	6,574	4,434	187
Nevada	32	624	W	508	W	W
Oregon	111	217	W	178	W	W
Washington	592	1,122	W	833	95	W
	1,223	2,493	W	1,840	671	13
U.S. Total	8,068	118,854	4,707	106,684	48,390	38,946

W = Withheld to avoid disclosure of individual company data.

Notes: • Stocks are reported as of the last day of the month. • Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," EIA-811, "Monthly Bulk Terminal Report," and EIA-816, "Monthly Natural Gas Liquids Report."

Table 32. Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, 1990
(Thousand Barrels)

Commodity	From I to			From II to				From III to	
	II	III	V	I	III	IV	V	I	II
Crude Oil	204	0	0	1,176	24,575	6,433	0	5,447	650,555
Petroleum Products	86,370	3,015	0	47,337	67,033	20,933	0	961,408	298,931
Pentanes Plus	0	0	0	0	2,373	7	0	0	7,685
Liquefied Petroleum Gases	0	50	0	10,835	28,233	1,207	0	23,195	50,060
Unfinished Oils	10	0	0	0	371	0	0	1,927	1,265
Motor Gasoline Blending Components	184	404	0	978	140	0	0	2,500	1,227
Finished Motor Gasoline	57,973	18	0	21,325	20,243	10,747	0	561,569	140,635
Leaded	106	0	0	260	1,103	328	0	796	1,831
Unleaded	57,867	18	0	21,065	19,140	10,421	0	560,773	138,804
Jet Fuel	69	0	0	0	14	175	0	1,234	1,199
Naphtha-Type	3,480	0	0	2,811	3,066	6,597	0	129,608	39,463
Kerosene-Type	0	0	0	0	925	0	0	5,008	904
Kerosene	3,480	0	0	2,811	2,141	6,597	0	124,600	38,559
Distillate Fuel Oil	360	0	0	450	0	0	0	4,274	32
Residual Fuel Oil	23,269	63	0	7,617	6,276	2,200	0	215,976	47,218
Petrochemical Feedstocks ^a	49	0	0	643	5,708	0	0	8,725	79
Special Naphthas	927	577	0	145	38	0	0	0	285
Lubricants	0	33	0	0	1	0	0	2,988	1,278
Waxes	49	1,241	0	1,041	401	0	0	5,268	4,609
Asphalt and Road Oil	0	0	0	0	0	0	0	81	0
Miscellaneous Products	0	349	0	1,465	51	0	0	3,073	3,896
Total	0	280	0	29	120	0	0	990	0
Total	86,574	3,015	0	48,513	91,608	27,366	0	966,855	949,486

Commodity	From III to		From IV to			From V to			
	IV	V	II	III	V	I	II	III	IV
Crude Oil	0	0	38,866	17,890	0	659	0	101,911	0
Petroleum Products	4	21,453	17,328	15,337	16,502	0	0	802	0
Pentanes Plus	0	0	1,215	2,068	0	0	0	0	0
Liquefied Petroleum Gases	0	0	5,922	13,289	0	0	0	0	0
Unfinished Oils	0	893	0	0	0	0	0	37	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	0	11,289	5,365	0	10,592	0	0	0	0
Leaded	0	2,137	1,114	0	3,449	0	0	0	0
Unleaded	0	9,132	4,251	0	7,143	0	0	0	0
Jet Fuel	0	41	0	0	0	0	0	0	0
Naphtha-Type	0	5,123	1,189	0	2,086	0	0	264	0
Kerosene-Type	0	2,884	1,141	0	982	0	0	0	0
Kerosene	0	2,219	48	0	1,104	0	0	264	0
Distillate Fuel Oil	0	0	0	0	0	0	0	0	0
Residual Fuel Oil	0	5,739	3,637	0	3,824	0	0	0	0
Petrochemical Feedstocks ^a	0	141	0	0	0	0	0	0	0
Special Naphthas	0	0	0	0	0	0	0	0	0
Lubricants	0	0	0	0	0	0	0	0	0
Waxes	0	247	0	0	0	0	0	501	0
Asphalt and Road Oil	0	0	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	0	0	0	0	0	0
Total	4	21,453	56,194	33,227	16,502	659	0	102,713	0

^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

Sources: Energy Information Administration (EIA) Forms EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," and EIA-817, "Monthly Tanker and Barge Movement Report."

Table 33. Movements of Crude Oil and Petroleum Products by Pipeline Between PAD Districts, 1990
(Thousand Barrels)

Commodity	From I to		From II to			From III to	
	II	III	I	III	IV	I	II
Crude Oil	204	0	74	24,491	6,433	0	650,486
Petroleum Products	84,893	0	25,600	60,090	20,933	767,087	252,978
Pentanes Plus	0	0	0	2,373	7	0	7,885
Liquefied Petroleum Gases	0	0	10,835	28,183	1,207	20,720	49,886
Motor Gasoline Blending Components	0	0	976	0	0	741	0
Finished Motor Gasoline	57,871	0	8,942	20,186	10,747	448,239	121,395
Leaded	108	0	0	1,103	326	586	1,804
Unleaded	57,765	0	8,942	19,083	10,421	447,653	119,591
Finished Aviation Gasoline	69	0	0	0	175	202	1,030
Jet Fuel	3,441	0	1,814	3,026	6,597	104,687	36,146
Naphtha-Type	0	0	0	885	0	1,968	904
Kerosene-Type	3,441	0	1,814	2,141	6,597	102,719	35,242
Kerosene	360	0	34	0	0	3,629	0
Distillate Fuel Oil	23,152	0	2,999	6,202	2,200	188,669	38,834
Residual Fuel Oil	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	120	0	0	0
Total	85,097	0	25,674	84,581	27,366	767,087	903,462

Commodity	From III to		From IV to			From V to	
	IV	V	II	III	V	III	IV
Crude Oil	0	0	38,866	17,890	0	41,275	0
Petroleum Products	4	19,184	17,328	15,337	16,502	0	0
Pentanes Plus	0	0	1,215	2,068	0	0	0
Liquefied Petroleum Gases	4	0	5,922	13,269	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0
Finished Motor Gasoline	0	10,522	5,365	0	10,592	0	0
Leaded	0	1,687	1,114	0	3,449	0	0
Unleaded	0	8,835	4,251	0	7,143	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0
Jet Fuel	0	4,996	1,189	0	2,086	0	0
Naphtha-Type	0	2,884	1,141	0	982	0	0
Kerosene-Type	0	2,112	48	0	1,104	0	0
Kerosene	0	0	0	0	0	0	0
Distillate Fuel Oil	0	3,668	3,637	0	3,824	0	0
Residual Fuel Oil	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	0	0	0	0
Total	4	19,184	56,194	33,227	16,502	41,275	0

Sources: Energy Information Administration (EIA) Form EIA-812, "Monthly Product Pipeline Report," and EIA-813, "Monthly Crude Oil Report."

Table 34. Movements of Crude Oil and Petroleum Products by Tanker and Barge Between PAD Districts, 1990
(Thousand Barrels)

Commodity	From I to			From II to			From III to	
	II	III	V	I	III	V	I	New England
Crude Oil	0	0	0	1,102	84	0	5,447	0
Petroleum Products	1,477	3,015	0	21,737	6,943	0	194,321	2,088
Liquefied Petroleum Gases	0	50	0	0	50	0	2,475	0
Unfinished Oils	10	0	0	0	371	0	1,927	0
Motor Gasoline Blending Components	184	404	0	0	140	0	1,759	0
Finished Motor Gasoline	102	18	0	12,383	57	0	113,330	427
Leaded	0	0	0	260	0	0	210	0
Unleaded	102	18	0	12,123	57	0	113,120	427
Finished Aviation Gasoline	0	0	0	0	14	0	1,032	79
Jet Fuel	39	0	0	997	40	0	24,921	353
Naphtha-Type	0	0	0	0	40	0	3,040	0
Kerosene-Type	39	0	0	997	0	0	21,881	353
Kerosene	0	0	0	416	0	0	845	0
Distillate Fuel Oil	117	63	0	4,618	74	0	27,107	624
Residual Fuel Oil	49	0	0	643	5,706	0	8,725	376
Less than 0.31 percent sulfur	13	0	0	0	0	0	0	0
0.31 to 1.00 percent sulfur	0	0	0	37	42	0	171	0
Greater than 1.00 percent sulfur	36	0	0	606	5,664	0	8,554	376
Petrochemical Feedstocks ^a	927	577	0	145	38	0	0	0
Special Naphthas	0	33	0	0	1	0	2,988	218
Lubricants	49	1,241	0	1,041	401	0	5,268	11
Waxes	0	0	0	0	0	0	81	0
Asphalt and Road Oil	0	349	0	1,465	51	0	3,073	0
Miscellaneous Products	0	290	0	29	0	0	990	0
Total	1,477	3,015	0	22,839	7,027	0	199,768	2,088

Commodity	From III to				From V to		
	Central Atlantic	Lower Atlantic	II	V	I	II	III
Crude Oil	5,447	0	69	0	659	0	60,636
Petroleum Products	15,006	177,227	45,955	2,269	0	0	802
Liquefied Petroleum Gases	0	2,475	174	0	0	0	0
Unfinished Oils	440	1,487	1,265	893	0	0	37
Motor Gasoline Blending Components	1,015	744	1,227	0	0	0	0
Finished Motor Gasoline	1,054	111,849	19,240	747	0	0	0
Leaded	0	210	27	450	0	0	0
Unleaded	1,054	111,639	19,213	297	0	0	0
Finished Aviation Gasoline	419	534	169	41	0	0	0
Jet Fuel	2,118	22,450	3,317	127	0	0	264
Naphtha-Type	886	2,154	0	0	0	0	0
Kerosene-Type	1,232	20,296	3,317	127	0	0	0
Kerosene	298	347	32	0	0	0	264
Distillate Fuel Oil	2,572	23,911	10,384	73	0	0	0
Residual Fuel Oil	876	7,473	79	141	0	0	0
Less than 0.31 percent sulfur	0	0	0	0	0	0	0
0.31 to 1.00 percent sulfur	0	171	0	0	0	0	0
Greater than 1.00 percent sulfur	876	7,302	79	141	0	0	0
Petrochemical Feedstocks ^a	0	0	285	0	0	0	0
Special Naphthas	1,329	1,441	1,278	0	0	0	0
Lubricants	3,848	1,409	4,609	247	0	0	501
Waxes	26	55	0	0	0	0	0
Asphalt and Road Oil	70	3,003	3,896	0	0	0	0
Miscellaneous Products	941	49	0	0	0	0	0
Total	20,453	177,227	48,024	2,269	659	0	61,438

^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.
Source: Energy Information Administration (EIA) Form EIA-817, "Monthly Tanker and Barge Movement Report."

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Table 35. Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II		
	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts
Crude Oil	7,282	204	7,078	689,625	32,184	657,441
Petroleum Products	1,008,745	89,385	919,360	402,629	135,303	267,326
Pentanes Plus	0	0	0	8,900	2,380	6,520
Liquefied Petroleum Gases	34,030	50	33,980	55,982	40,275	15,707
Ethane/Ethylene	0	0	0	3,876	13,140	-9,264
Propane/Propylene	33,050	8	33,042	35,511	19,911	15,600
Normal Butane/Butylene	530	42	488	6,978	5,295	1,683
Isobutane	450	0	450	9,617	1,929	7,688
Unfinished Oils	1,927	10	1,917	1,275	371	904
Motor Gasoline Blending Components	3,476	588	2,888	1,411	1,116	295
Finished Motor Gasoline	582,894	57,991	524,903	203,973	52,315	151,658
Leaded	1,056	106	950	3,051	1,689	1,362
Unleaded	581,838	57,885	523,953	200,922	50,626	150,296
Finished Aviation Gasoline	1,234	69	1,165	1,268	189	1,079
Jet Fuel	132,419	3,480	128,939	44,132	12,474	31,658
Naphtha-Type	5,008	0	5,008	2,045	925	1,120
Kerosene-Type	127,411	3,480	123,931	42,087	11,549	30,538
Kerosene	4,724	380	4,364	392	450	-58
Distillate Fuel Oil	223,593	23,332	200,261	74,124	16,093	58,031
Residual Fuel Oil	9,368	49	9,319	128	6,349	-6,221
Petrochemical Feedstocks ^a	145	1,504	-1,359	1,212	183	1,029
Special Naphthas	2,988	33	2,955	1,278	1	1,277
Lubricants	6,309	1,290	5,019	4,658	1,442	3,216
Waxes	81	0	81	0	0	0
Asphalt and Road Oil	4,538	349	4,189	3,896	1,516	2,380
Miscellaneous Products	1,019	280	739	0	149	-149
Total	1,016,027	89,589	926,438	1,092,254	167,487	924,767

Commodity	PAD District III			PAD District IV			PAD District V		
	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts
Crude Oil	144,376	656,002	-511,626	6,433	56,756	-50,323	0	102,570	-102,570
Petroleum Products	86,187	1,281,796	-1,195,609	20,937	49,167	-28,230	37,955	802	37,183
Pentanes Plus	4,441	7,685	-3,244	7	3,283	-3,276	0	0	0
Liquefied Petroleum Gases	41,552	73,259	-31,707	1,211	19,191	-17,980	0	0	0
Ethane/Ethylene	18,939	2,416	16,523	0	7,259	-7,259	0	0	0
Propane/Propylene	13,187	56,490	-43,303	1,140	6,479	-5,339	0	0	0
Normal Butane/Butylene	6,615	5,447	1,168	71	3,410	-3,339	0	0	0
Isobutane	2,811	8,908	-6,095	0	2,043	-2,043	0	0	0
Unfinished Oils	408	4,085	-3,677	0	0	0	893	37	856
Motor Gasoline Blending Components	544	3,727	-3,183	0	0	0	0	0	0
Finished Motor Gasoline	20,261	713,473	-693,212	10,747	15,957	-5,210	21,861	0	21,861
Leaded	1,103	4,784	-3,681	326	4,563	-4,237	5,588	0	5,588
Unleaded	19,158	708,709	-689,551	10,421	11,394	-973	16,275	0	16,275
Finished Aviation Gasoline	14	2,474	-2,460	175	0	175	41	0	41
Jet Fuel	3,330	174,194	-170,864	6,597	3,275	3,322	7,209	264	6,945
Naphtha-Type	925	8,796	-7,871	0	2,123	-2,123	3,866	0	3,866
Kerosene-Type	2,405	165,398	-162,993	6,597	1,152	5,445	3,343	264	3,079
Kerosene	0	4,306	-4,306	0	0	0	0	0	0
Distillate Fuel Oil	6,339	266,933	-260,594	2,200	7,461	-5,261	7,563	0	7,563
Residual Fuel Oil	5,708	8,945	-3,239	0	0	0	141	0	141
Petrochemical Feedstocks ^a	615	285	330	0	0	0	0	0	0
Special Naphthas	34	4,266	-4,232	0	0	0	0	0	0
Lubricants	2,143	10,124	-7,981	0	0	0	247	501	-254
Waxes	0	81	-81	0	0	0	0	0	0
Asphalt and Road Oil	400	6,969	-6,569	0	0	0	0	0	0
Miscellaneous Products	400	990	-590	0	0	0	0	0	0
Total	230,563	1,937,798	-1,707,235	27,370	105,923	-78,553	37,955	103,372	-65,417

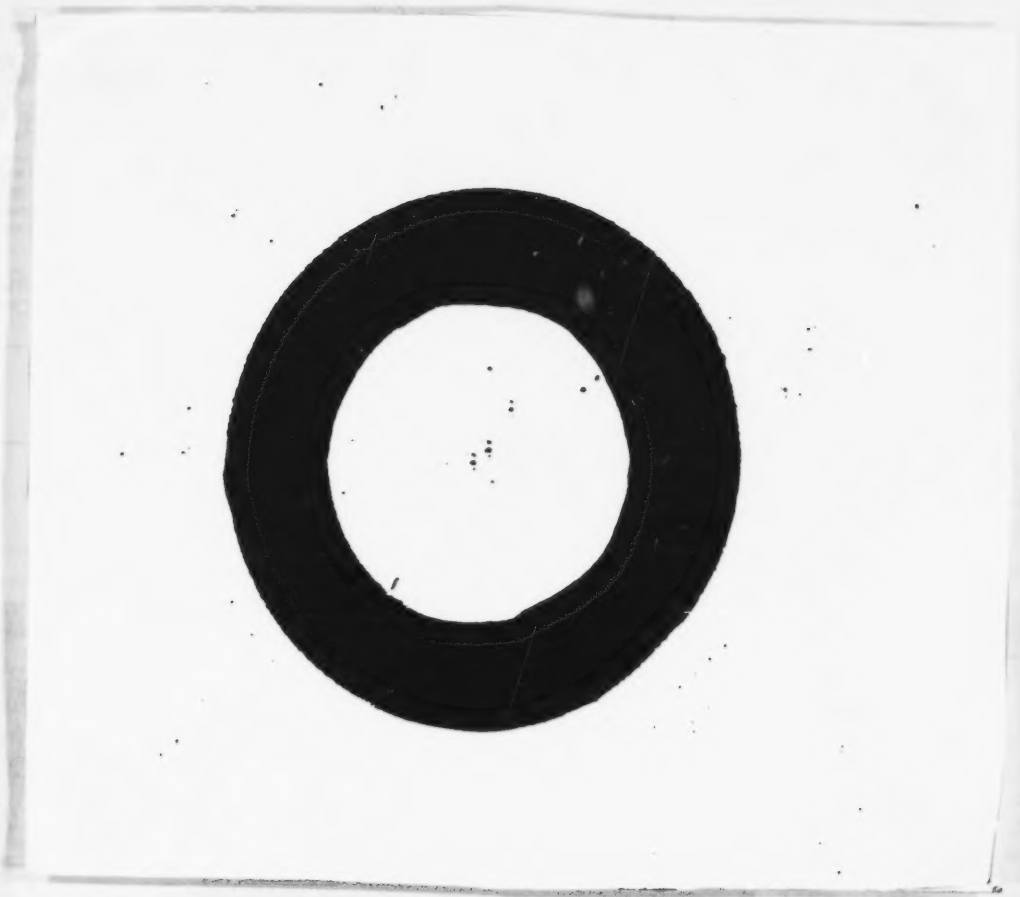
^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

Sources: Energy Information Administration (EIA) Forms EIA-812, "Monthly Product Pipeline Report," EIA-813, "Monthly Crude Oil Report," and EIA-817, "Monthly Tanker and Barge Movement Report."

U.S. Refining Industry



As part of the refinery process, a catalytic cracking unit is used to increase the yield of gasoline from crude oil



U.S. Refining Industry

by Nancy Masterson

Introduction

From January through September 1990, the U.S. refining industry experienced high crude oil distillation utilization rates due to favorable refinery margins.¹ However, within two months of Iraq's invasion of Kuwait on August 2, 1990, rising crude oil prices and falling petroleum product demand led to low refinery margins and a decline in utilization rates during the latter part of the year.

Other major highlights of the U.S. refining industry in 1990 were the following:

- Crude oil distillation capacity, as well as most downstream processing capacities, increased as of January 1, 1991, from the previous January. At the same time, the number of refineries in operation decreased from 205 to 202, as six refineries were completely shut down in 1990, and three were reactivated.
- During 1990, total crude oil received at refineries rose only 0.1 percent to an average of 13.7 million barrels per day. However, receipts of foreign crude oil rose by 2.7 percent, while domestic receipts dropped 1.9 percent. This is the fifth consecutive year in which foreign crude oil receipts have increased and domestic receipts have decreased from the previous year. Although foreign receipts have been rising, domestic receipts still comprise a majority of the total crude oil received at refineries: about 55 percent of the total in 1990 compared to 56 percent during 1989.
- Refinery yields of motor gasoline, residual fuel oil, and liquefied petroleum gases (LPG's) all declined somewhat during 1990 from their 1989 levels. Of the major petroleum products, only kerosene-type jet fuel yield grew significantly from the previous year, primarily due to increased demand to support military operations in the Persian Gulf.

¹ Margins refer to the difference between the wholesale petroleum prices the refiner receives and the acquisition costs of the crude oil that the refiner must pay.

Refinery Activity Before and After the Iraqi Invasion of Kuwait

The U.S. refining industry experienced two distinct periods during 1990. During the first period from January through July, the industry experienced high refinery margins due to continually declining crude oil prices and relatively steady consumer prices of petroleum products. In addition, strong consumer demand for gasoline during the summer driving season, particularly for high octane varieties, pushed refinery margins to near record highs during the summer of 1990. Consequently, the refining industry experienced high utilization rates during this time. The operating utilization rate, which reflects refinery utilization if all idle capacity is removed, was at least 90 percent during each month of January through July, excluding March. Traditionally, refineries undergo maintenance in March to prepare for increased motor gasoline production in the spring. Operating utilization rates began climbing in April and reached 96 percent in July, the highest monthly level since the 1970's. During the first 6 months of 1990, gross refinery inputs (crude and other oils) to U.S. atmospheric crude oil distillation units averaged 13.5 million barrels per day, as compared to the same period in 1989 when they averaged 13.4 million barrels per day. Furthermore, in July 1990, gross inputs to refineries reached a record high level of 14.4 million barrels per day. The summer Reid Vapor Pressure (RVP) regulations also contributed to higher utilization rates because more throughput was needed to maintain production levels.

The second period began with the sharp rise of crude oil prices after the August 2, 1990, Iraqi invasion of Kuwait. The composite refiner acquisition cost of crude oil rose from \$16.15 per barrel in July to \$23.57 per barrel in August.² The operating utilization rate declined slightly in August to 95 percent. However, by October 1990, lower petroleum product demand and continued high crude prices, brought on by uncertainties regarding the spread of war in the Middle East and replacement supplies, caused refining margins to decline

² Energy Information Administration, *Monthly Energy Review*, January 1991, DOE/EIA-0035(91/01), Table 9.1.

Note: Unless otherwise indicated, data in this article were taken from the Summary Statistics section and Refinery Capacity section of this report, *Petroleum Supply Annual 1990*, DOE/EIA-0340, Volumes 1 and 2 and predecessor editions.

Loss of Iraqi and Kuwaiti Crude Oil Impacted U.S. Refineries

Before the invasion of Kuwait on August 2, 1990, 23 U.S. refineries regularly received imports of crude oil from either Iraq or Kuwait. The individual refinery dependency on crude oil imports from these countries ranged from 1 to 92 percent. By October 1990, imports of crude oil from Iraq and Kuwait had ceased. In addition, during August through December 1990, imports from Nigeria were at a sharply reduced level. The lost crude oil at these 23 refineries was made up by increased imports from Saudi Arabia, Mexico, and Venezuela, as well as increased receipts of domestic crude oil.

Imports and Domestic Refinery Receipts of Crude Oil for Twenty-Three U.S. Refineries Dependent on Iraqi and Kuwaiti Crude Oil, 1990
(Thousand Barrels per Day)

Country	Jan.-July Average	Aug.-Dec. Average	Difference
Iraq	670	242	-428
Kuwait	102	43	-59
Nigeria	335	138	-197
Saudi Arabia	499	686	+187
Mexico	411	473	+62
Venezuela	47	73	+26
All Other	853	676	-177
 Total Foreign Imports	 2,917	 2,331	 -586
 Domestic Receipts	 1,588	 1,828	 +240
 Total Receipts	 4,505	 4,159	 -346

Note: Excludes Strategic Petroleum Reserve imports and imports to refineries that started importing Iraqi and Kuwaiti crude oil after June 1990.

Source: Energy Information Administration, Integrated Petroleum System, Form EIA-814, "Monthly Imports Report," and Form EIA-810, "Monthly Refinery Report," data base.

The cessation of Iraqi and Kuwaiti imports to the United States affected many other refineries. For the first 7 months of 1990, Alaskan receipts at all Gulf Coast refineries were 28 percent below the level of the first 7 months of 1989. However, Alaskan receipts in this region in August 1990 were about 208,000 barrels per day, 57.3 percent above the August 1989 volume. Alaskan receipts to Gulf Coast refineries averaged 169,000 barrels per day during August through December 1990, compared to 144,000 barrels per day during the same period of 1989.

Also, during the post-invasion months of August through December 1990, U.S. refiners imported 200,000 barrels per day more oil from Saudi Arabia than they had averaged for the period January through July 1990. Five refineries with total crude oil distillation capacity of 958,000 barrels per day received 50 percent or more of their crude oil requirements from Saudi Arabia. Three of these refineries are owned by Star Enterprise, a joint Texaco-Saudi Arabia venture; others are Ashland Oil's Catlettsburg, Kentucky refinery, and Exxon's Linden, New Jersey refinery.

Table FE1. Number and Operable Capacity of U.S. Petroleum Refineries, 1981-1991
(Thousand Barrels per Stream Day, Except Where Noted)

As of January 1 of Year	Number	Crude Distillation (thousand barrels per calendar day)	Vacuum Distillation	Thermal Cracking		Catalytic Cracking Fresh & Recycled	Catalytic Reforming	Catalytic Hydro- cracking	Catalytic Hydro- treating
				Fluid & Delayed Coking	Visbreak- ing & Other				
1981	324	18,621	7,033	1,021	566	6,136	4,098	909	8,487
1982	301	17,890	7,197	1,146	535	6,036	3,966	892	8,539
1983	258	16,859	7,180	1,198	518	5,890	3,918	883	8,354
1984	247	16,137	7,165	1,393	459	5,802	3,907	952	9,009
1985	223	15,659	6,998	1,407	451	5,738	3,750	1,053	8,897
1986	216	15,459	6,892	1,435	444	5,677	3,744	1,125	8,791
1987 ^a	219	15,566	6,935	1,464	464	5,716	3,805	1,189	9,083
1988	213	15,915	7,198	1,515	565	5,806	3,891	1,202	9,170
1989	204	15,655	7,225	1,516	557	5,650	3,911	1,238	9,440
1990	205	15,572	7,245	1,549	559	5,755	3,896	1,282	9,537
1991	202	15,676	7,276	1,629	529	5,862	3,926	1,308	9,676

^a Beginning in 1987, the Hawaiian Independent Refinery is included in U.S. Total.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report", and predecessor forms.

to levels some U.S. refiners had not experienced in years. Utilization rates dropped as product demand continued to decline from peak August levels, the composite refiner acquisition cost of crude oil increased further to \$33.06 per barrel, and scheduled refinery turnarounds, which typically occur in the fall to prepare for the winter heating season, began to take place. These events contributed to a decrease in gross refinery inputs during October 1990 to 13.1 million barrels per day, 8.5 percent below the previous month. By December, gross refinery inputs were 13.0 million barrels per day, 10.1 percent below the peak levels of July.

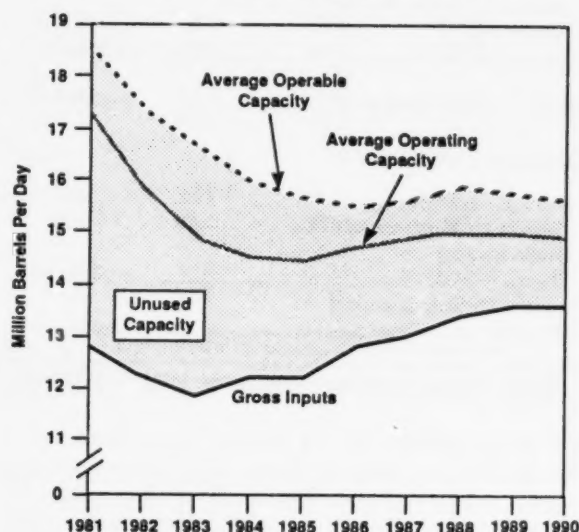
Crude Oil Distillation Capacity and Annual Utilization Rates

As of January 1, 1991, U.S. operable crude oil distillation capacity increased to 15.7 million barrels per calendar day, 0.7 percent above the January 1, 1990 level (Table FE1). At the same time, the number of refineries in operation decreased to 202, as six U.S. refineries were completely shut down in 1990, and three were reactivated (Table FE2).

During 1990, operable (operating plus idle) crude oil distillation capacity averaged 15.6 million barrels per day, down slightly from the level of 15.7 during 1989. Refinery utilization rates for operable capacity averaged 87.1 percent for the year, compared with 86.3 percent in 1989. The operating (excluding idle) utilization rate during 1990 averaged 90.9 percent compared with 90.2 percent during 1989. Gross inputs to crude oil distillation units during 1990 were 0.4 percent above the level of 1989 (Figure FE1). The difference between operating and operable utilization rates is greatest in

the Gulf Coast area (PAD District III) due to an average 461,000 barrels per day of idle capacity in that area during 1990 (Table FE3).

Figure FE1. Gross Inputs to Crude Oil Distillation Units, and Average Operable and Operating Capacity, 1981-1990



Note: Capacities are the average of reported monthly capacities. Operating capacity is operable capacity less idle capacity.

Sources: 1981 and 1982: Energy Information Administration (EIA), Integrated Petroleum System, Form EIA-810, "Monthly Refinery Report," data base; 1983 through 1988: EIA, *Petroleum Supply Annual*, (PSA), DOE/EIA-0340, Volume 2, Table 11; 1989 and 1990: EIA, PSA, DOE/EIA-0340, Volume 2, Table 16.

Table FE2. Refinery Closings and Reactivations During 1990

Refinery/Location	Crude Oil Distillation Capacity (barrels per calendar day)	Downstream Capacity (barrels per stream day)	Years in Operation
Closings:			
Eagle Refining Jacksboro, TX	1,800	1,800	2
Gibson Oil & Refining Bakersfield, CA	9,600	0	3
Imron Refining, Inc. (formerly Polo Chemical) San Leon, TX	7,000	0	never operated
Phoenix Refining Co. St. Mary's, WV	19,200	4,200	2
Sabine Resources Group Stonewall, LA	10,000	0	never operated
Vulcan Refining Cordova, AL	9,500	5,000	37
Total Closings	57,100	11,000	—
Reactivations:			
Anchor Refining McKittrick, CA	10,000	6,000	—
CAS Refining Company (formerly Celeron Oil & Gas, Mermentau, LA) Jennings, LA	13,500	0	—
Indian Refining (formerly Texaco Refining & Marketing) Lawrenceville, IL	55,000	125,000	—
Total U.S. Reactivations	78,500	131,000	—
Additional Reactivations:			
Arochem International (formerly Commonwealth Oil Refining Co.) Ponce, Puerto Rico	80,000	0	—
Peerless Oil and Chemical Ponce, Puerto Rico	8,800	0	—

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

The most significant capacity addition in the United States during 1990 was Indian Refining's 55,000-barrel-per-day refinery in Lawrenceville, Illinois. This refinery came on stream in August 1990. Two smaller refineries with a combined crude oil distillation capacity of 23,500 barrels per day were also reactivated during 1990. An additional 88,800 barrels per day of crude oil distillation capacity was reactivated at two refineries in Puerto Rico. One was the former Commonwealth Oil Refinery, which is now being operated by Arochem International, and has a capacity of 80,000 barrels per day.

No new refineries have been built in the United States in nearly 15 years. The construction of an entirely new refinery in the United States is unlikely given the permit process, current economic conditions, and environmental constraints. Therefore, additional capacity is created through construction of new processing units at existing refineries, modifications to existing units, and through the cannibalization and reactivation of mothballed refineries. A mothballed refinery is one that has been shut down and undergoes routine maintenance so that the equipment and lines do not rust or become permanently unusable. Cannibalization occurs when selected units

Table FE3. Annual Average Operable and Operating Capacity and Utilization Rates, by PAD District
(Thousand Barrels per Day, Except Where Noted)

Year/Element	PAD District					
	I	II	III	IV	V	U.S.
1985						
Operable Capacity	1,538	3,367	7,199	558	3,010	15,671
Percentage Utilization	75.4	81.5	77.2	77.6	75.6	77.6
Operating Capacity	1,371	3,160	6,660	529	2,793	14,513
Percentage Utilization	84.5	86.8	83.4	81.9	81.5	83.8
1986						
Operable Capacity	1,456	3,296	7,106	534	3,065	15,459
Percentage Utilization	84.3	85.9	83.5	81.0	78.2	82.9
Operating Capacity	1,347	3,162	6,809	518	2,857	14,692
Percentage Utilization	91.2	89.6	87.1	83.8	84.0	87.3
1987						
Operable Capacity	1,450	3,282	7,174	535	3,202	15,642
Percentage Utilization	86.6	86.9	82.5	81.7	79.1	83.1
Operating Capacity	1,383	3,173	6,819	518	3,022	14,915
Percentage Utilization	90.8	89.9	86.9	84.4	83.9	87.2
1988						
Operable Capacity	1,464	3,302	7,449	537	3,176	15,927
Percentage Utilization	88.5	88.7	81.8	84.7	84.2	84.4
Operating Capacity	1,435	3,216	6,746	533	3,045	14,975
Percentage Utilization	90.4	91.0	90.3	85.4	87.8	89.8
1989						
Operable Capacity	1,452	3,267	7,377	552	3,054	15,701
Percentage Utilization	87.2	89.2	84.2	83.4	88.4	86.3
Operating Capacity	1,422	3,243	6,802	540	3,017	15,024
Percentage Utilization	89.0	89.8	91.3	85.2	89.5	90.2
1990						
Operable Capacity	1,505	3,307	7,165	555	3,091	15,624
Percentage Utilization	83.5	92.0	85.6	83.4	87.9	87.1
Operating Capacity	1,414	3,281	6,704	540	3,034	14,974
Percentage Utilization	88.9	92.7	91.4	85.7	89.6	90.9

Notes: • Operating Capacity is operable capacity less idle capacity. • Totals may not add to sum of components due to independent rounding. • Capacities are the average of reported monthly crude oil distillation capacities.

Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340, Volume 1, Table 11 (1985-1988); Table 16 (1989-1990).

in a shutdown refinery are dismantled and reconstructed at another site, either as a "new" refinery or as a part of an already existing plant.

Since 1980, a total of 139 refineries have been shut down, representing a combined crude oil distillation capacity of 2.5 million barrels per day and downstream processing capacity of 2.2 million barrels per day (Table FE4). Of these, 32 with combined crude oil distillation capacity of 1.1 million barrels per calendar day have been dismantled. More than half of the

dismantled crude oil distillation capacity is in the Midwest (PAD District II). Nearly all the dismantled refineries in the Midwest were complex and very complex³ with combined downstream capacity of nearly 1 million barrels per stream day.

³ Complex refineries have downstream units which are capable of converting heavy gas oil hydrocarbons, such as fuel oil, into lighter products. Very complex refineries have the additional capability to convert (through the use of thermal cracking units) the heaviest hydrocarbons fractions into lighter products.

Caribbean and South American Refining Capacity

In view of the amount of U.S. capacity lost in the last decade, and the fact that a significant amount of new capacity is not likely to be built in the United States in the near future, Caribbean and South American refining capacity has become more important to the United States. The location of these countries, their less stringent environmental regulations, and lower labor costs make them logical sites for refinery expansion to feed U.S. demand. Venezuela provides the largest share of net product imports into the United States (350 thousand barrels per day in 1990 or 43 percent of the combined Caribbean and South American net imports). Petroleos de Venezuela plans to expand domestic refining capacity by 360,000 barrels per day over the next few years, including a new 180,000 barrels per day refinery to be built in eastern Venezuela. Caribbean and South American refineries can be expected to provide a growing share of petroleum products to the United States in the future as environmentally-constrained domestic refiners try to keep pace with demand.

Caribbean and South American Refining Capacity (thousand barrels per day)

Processing Unit	Caribbean		South America	
	Existing 1/1/91	Planned* 1991-1993	Existing 1/1/91	Planned 1991-1993
Crude Oil Distillation	1,470	42	4,085	671
Downstream Charge Capacities:				
Vacuum Distillation	412	12	1,858	101
Thermal Operations	93	—	442	74
Catalytic Cracking	40	7	800	146
Catalytic Reforming	215	—	106	2
Catalytic Hydrocracking	16	75	24	37
Hydrotreating	598	117	574	182
Total	1,374	211	3,804	542
Production Capacities:				
Alkylation	3	—	79	1
Isomerization	20	—	29	—
Total	23	—	108	1

*Includes Aruba, Jamaica, Puerto Rico, and Trinidad only.

Notes: • The Caribbean includes Aruba, Barbados, Curacao, Jamaica, Martinique, Puerto Rico, Trinidad and Tobago, and the Virgin Islands. • South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela.

Sources: • For existing capacities: Aruba, telephone conversation with Coastal Petroleum, January 1991; Curacao, *Petroleum Intelligence Weekly*, June 18, 1990, p.5 (1989 data is the most recent available); Puerto Rico and the Virgin Islands, Energy Information Administration, *Petroleum Supply Annual 1990*, DOE/EIA-0340, Volume 1; all others, *Oil and Gas Journal*, December 31, 1990, pp.86 and 87 • For planned capacities: *Oil and Gas Journal*, October 15, 1990, pp.57-65; and *Petroleum Intelligence Weekly*, June 18, 1990, p. 5.

An additional 33 refineries, with crude oil distillation capacity of about 716,000 barrels per day, have been mothballed from 1980 through the end of 1990; i.e., they are typically able to be reactivated within 12 to 18 months. However, fulfilling local, Federal, and State licensing requirements could take a few years after the decision has been made to reactivate. Most of the country's mothballed capacity is in the Gulf Coast area where approximately 448,000 barrels per day of crude capacity and 264,000 barrels per day of downstream capacity have remained intact and undergo routine maintenance. Nine U.S.

refineries have been cannibalized. The remaining 65 shut-down refineries are of undetermined status, the vast majority of which were simple refineries that lacked heavy oil conversion capabilities.

Downstream Processing

Most downstream processes, especially those associated with motor gasoline production, showed increases in their capaci-

Table FE4. Refineries Shutdown Between January 1, 1980, and January 1, 1991

Status	Number of Refineries	Crude Distillation Capacity (barrels per calendar day)	Total Downstream Capacity (barrels per stream day)
Mothballed	33	715,700	452,340
Dismantled	32	1,054,844	1,210,480
Cannibalized	9	95,834	91,100
Status unknown	65	622,565	408,360
Total	139	2,488,943	2,162,280

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report," and predecessor forms.

ties as of January 1, 1991. The largest year-to-year capacity increases were for coking (up 5.2 percent), catalytic hydrocracking (up 2.0 percent), catalytic cracking (up 1.9 percent), and catalytic hydrotreating (up 1.5 percent) (Table FE1). In addition, production capacity for isomertization increased 7.5 percent and alkylation production capacity grew 4.6 percent. The capacity increases for these processes demonstrate the focus on more production of higher octane and cleaner fuels.

From January 1, 1990, to January 1, 1991, total downstream capacity increased by 375,000 barrels per stream day. This change involved upgrading, extensions, modernizations, and reactivations.

Utilization rates for the three primary motor gasoline-producing downstream processes remained strong during 1990 (Table FE5). The 1990 average coker utilization rate was 92.7 percent, compared with 95.5 percent during 1989. Cokers generally have the highest utilization rate because they can process the heaviest fractions of crude oil (Figure FE2). Moreover, they produce large volumes of heavy gas oils that can be further processed in catalytic crackers for the production of gasoline. Inputs to cokers⁴ averaged 1.4 million barrels per day during 1990, 0.7 percent above the previous year. U.S. coker capacity grew from the January 1, 1990, level of 1.5 million barrels per stream day to the January 1, 1991 level of 1.6 million barrels, thereby lowering the utilization rate.

Catalytic cracking is a refining process for which the feed (heavy gas oil) is lighter than that of cokers. Inputs to catalytic crackers grew during 1990 to a level of 4.7 million barrels per day, 2.6 percent above the level of inputs in 1989. In the United States, catalytic cracking utilization rates have steadily increased every year since 1987, and reached an average of 89.9 percent during 1990. Catalytic cracking contributes more than 50 percent of the gasoline pool, but its output contains 20 to 27 percent undesirable aromatics.⁵ However,

⁴ Inputs to cokers, catalytic crackers, and hydrocrackers are published in the Energy Information Administration, *Petroleum Supply Annual*, 1990, DOE/EIA-0340, Volumes 1 and 2, Table 16.

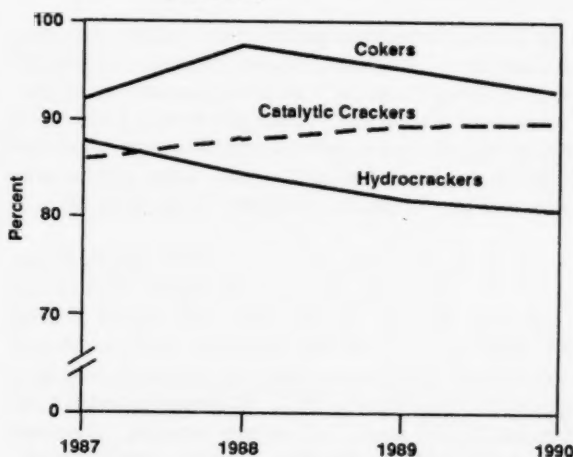
because of their high-aromatic volume, gasoline blending components produced by catalytic crackers have the highest octane quality of blending components derived from the three primary motor gasoline-producing downstream units (Table FE6). The catalytic cracker will continue to be the major contributor to the gasoline pool, by supplying more feedstock (olefins and isobutylene) to alkylation and methyl tertiary butyl ether (MTBE) units.

Catalytic hydrocrackers averaged 80.8 percent utilization during 1990. Inputs to hydrocrackers rose during 1990 to a level of 941,000 barrels per day, 1.3 percent above the 1989 level. Although catalytic hydrocrackers produce an average processing gain of 25 percent, the utilization rates of hydrocrackers since 1988 have consistently lagged behind those of catalytic crackers and cokers. This is most probably due to the lower octane quality of blending components produced by hydrocrackers, compared with cokers and catalytic crackers. Since the current emphasis among motor gasoline producers is on octane enhancement rather than yield enhancement, refiners are not currently utilizing hydrocrackers as heavily as other gasoline-producing downstream units. However, this may change as crude oils become heavier and larger volumes of crude are needed to produce light-end products.

Capacity for catalytic reforming on January 1, 1991, increased by 0.8 percent from the previous January. Although this process upgrades low octane naphthas to a high octane blending component, catalytic reformers will contribute less

⁵ *Oil and Gas Journal*, "Capital Outlays for Gasoline Reformulation Can be Minimized," September 3, 1990, pp. 44-49.

Figure FE2. U.S. Average Annual Refinery Utilization Rates for Motor Gasoline-Producing Downstream Units, 1987-1990 (Percent)



Note: Utilization rates are based on barrels per calendar day.
Sources: Energy Information Administration (EIA), Form EIA-810, "Monthly Refinery Report," and Form EIA-820, "Annual Refinery Report."

Table FE5. Average Annual U.S. Refinery Utilization Rates for Three Primary Motor Gasoline-Producing Downstream Units (percent)

PAD District and Processing Unit	1987	1988	1989	1990
PAD District I				
Cokers	85.2	93.8	89.9	95.8
Catalytic crackers	87.5	96.6	97.3	88.7
Hydrocrackers	75.9	72.8	76.8	76.6
PAD District II				
Cokers	88.2	96.9	91.0	93.3
Catalytic crackers	87.1	84.5	84.5	89.0
Hydrocrackers	77.6	81.6	75.0	83.3
PAD District III				
Cokers	93.4	100.5	101.7	93.8
Catalytic crackers	84.7	88.0	90.3	90.3
Hydrocrackers	87.5	78.6	80.7	77.1
PAD District IV				
Cokers	68.5	63.1	65.4	73.3
Catalytic crackers	79.4	84.9	83.7	86.3
Hydrocrackers	89.2	72.0	70.3	45.6
PAD District V				
Cokers	95.6	97.6	93.4	91.8
Catalytic crackers	90.6	90.5	90.4	91.4
Hydrocrackers	93.8	94.8	87.0	85.8
United States				
Cokers	92.3	97.8	95.5	92.7
Catalytic crackers	86.2	88.4	89.5	89.9
Hydrocrackers	87.9	84.8	81.9	80.8

Note: Utilization rates are based on barrels per calendar day. Utilization rates are expressed as percentages and represent inputs divided by the average annual capacity. Annual capacities used are the average of January 1 stream day capacities for the indicated year and the following year. Stream day capacities were adjusted to calendar day capacities by calculating calendar day capacities at 92 percent, 95 percent, and 90 percent of stream day capacities for cokers, catalytic crackers, and hydrocrackers, respectively.

Sources: Energy Information Administration (EIA) Forms EIA-810, "Monthly Refinery Report," and EIA-820, "Annual Refinery Report."

to the future reformulated gasoline pool because aromatics constitute up to 70 percent of the yield from the reformer, of which 5 percent is benzene.⁶ Benzene, a known carcinogen, is an aromatic that currently constitutes about 1.5 percent of gasoline, and this must be reduced to no more than 1.0 percent by 1995 in a number of large U.S. cities. Other gasoline aromatics may also be limited in the same locations in 1995.

Capacity for hydrotreaters, or desulfurization units, increased for the fifth consecutive year due to the decline in the quality of crude oil (Figures FE3 and FE4) and tougher Federal regulations on the maximum allowable sulfur content of diesel fuel oils (a reduction from 0.25 percent by weight to 0.05 percent by October 1, 1993). Hydrotreating capacity as of January 1, 1991, was 9.7 million barrels per day, 1.5 percent above the level of a year earlier.

⁶ *Oil and Gas Journal*, "Capital Outlays for Gasoline Reformulation Can be Minimized," September 3, 1990, pp. 44-49.

Refinery Yields

Refinery yields (percentage of how much product results from the processing of one barrel of crude oil) are based on the ratio of the production of finished products to the inputs of crude oil and net inputs of unfinished oils. Yields for the five major products (motor gasoline, distillate and residual fuel oils, kerosene-type jet fuel, and liquified petroleum gases (LPG's)) generally account for about 85 percent of the total refinery yields.

The annual motor gasoline yield declined slightly for the third consecutive year to 45.6 percent in 1990. This is a result of declining quality of crude oil inputs and the continued shift in the refinery product slate toward higher octane unleaded gasoline. Heavier crude oils produce a lower volume of light-end products, and the processing units used to create high-octane gasoline run at more severe temperatures which results

Table FE6. Clear Octane of Selected Motor Gasoline Blending Components

Blending Components	Motor Octane Number	Research Octane Number	Average
Light hydrocrackate	73.7	75.5	74.6
Heavy hydrocrackate	75.6	79.0	77.3
Catalytic cracked gasoline	76.8	92.3	84.6
Coker gasoline	76.6	85.5	81.1

Note: The tests for octane numbers are run under two sets of conditions. The Research Octane Number (RON) test simulates driving under mild conditions; the Motor Octane Number (MON) test is run under more severe conditions and simulates operations under load or at high speeds. The two measures give an indication of performance under the full range of conditions. The octane numbers posted on gasoline pumps are the average of the two measures.

Source: Leffler, William L., *Petroleum Refining for the Non-Technical Person* (1985), pp. 93-95.

in greater processing losses and increased refinery fuel consumption.

Typically, motor gasoline yields begin to increase in March in preparation for the summer driving season, and peak in July or August. However, during 1990, the highest motor gasoline yield (46.5 percent) was in February when refinery production of motor gasoline was unusually high for that time of year. Ordinarily, refiners are still operating in a distillate mode in February, and the change to a gasoline mode doesn't occur until the spring. However, a surplus of distillate stocks

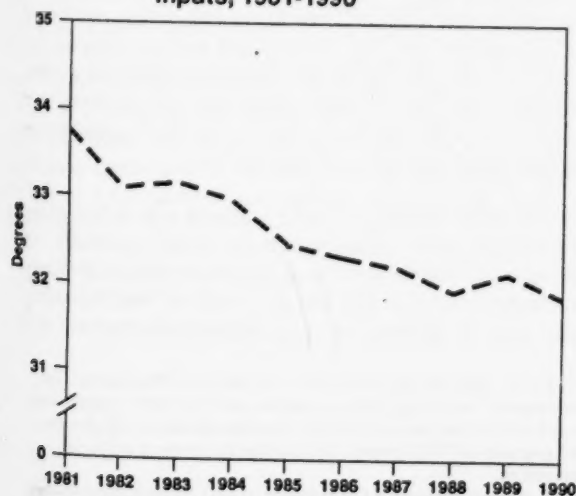
occurred during January 1990, due to high distillate production levels during that month (a response to the extremely cold weather in some parts of the country in December 1989) which took place simultaneously with the return of warmer weather. Thus, refiners began producing large volumes of motor gasoline a month earlier than usual. Motor gasoline yield averaged about 45.7 percent during March through August 1990, the usual season in which refineries operate in a gasoline mode. This compares with an average yield of 46.3 percent during the same period of 1989.

For distillate fuel oil, the seasonal peak for yields is during the winter heating season. Distillate yield peaked in January 1990 at 22.3 percent. However, by February and March, distillate yield had dropped to less than 20 percent as warmer temperatures returned, and the shift to motor gasoline production took place. The annual refinery yield of distillate fuel oil has remained fairly steady in recent years, at just slightly under 21 percent. The distillate yield in 1990 was 20.9 percent compared with 20.8 percent in 1989.

Residual fuel oil yields dropped for the first time in 3 years, primarily due to the decrease in residual demand at electric utilities during 1990. The annual yield for residual fuel oil during 1990 was 6.8 percent, compared with 6.9 percent in 1989. Yields of residual fuel oil also peak during the winter heating season. During 1990, the highest yield occurred in January at 8.3 percent.

Yields of kerosene-type jet fuel tend to be lowest during the summer months, as was the case during 1990. However, yields began to increase considerably in September after the August 2 invasion of Kuwait by Iraq, and demand for jet fuel

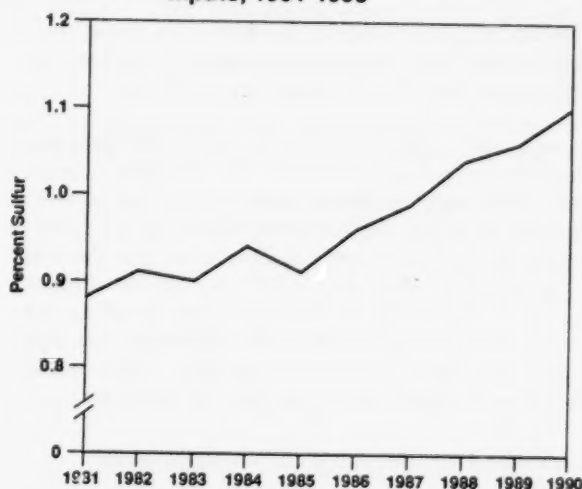
Figure FE3. Average API Gravity of Crude Oil Inputs, 1981-1990



Note: The higher the API gravity, the lighter the compound. For a detailed definition of API gravity, see Glossary.

Sources: Energy Information Administration (EIA), *Petroleum Supply Annual*, (PSA) 1981-1984, DOE/EIA-0340, Volume 2; and PSA, 1985-1990, DOE/EIA-0340, Volume 1.

Figure FE4. Average Sulfur Content of Crude Oil Inputs, 1981-1990



Sources: Energy Information Administration (EIA), *Petroleum Supply Annual*, (PSA) 1981-1984, DOE/EIA-0340, Volume 2; and PSA, 1985-1990, DOE/EIA-0340, Volume 1.

increased to support military operations in the Persian Gulf. Kerosene-type jet fuel yields during each month of October through December reached all-time monthly high rates of more than 10 percent. The annual yield for this fuel during 1990 was 9.4 percent, compared to 8.6 percent during 1989.

Yields of LPG dropped for the first time in several years, due to the decline in LPG demand during 1990. LPG yield was 3.6 percent in 1990 compared with 4.0 percent in 1989. Because LPG is composed of several components which can be used in place of other fuels in the residential, commercial, and industrial sectors, seasonal yields vary by component and the uses for which LPG's are needed each year.

The Clean Air Act Amendments of 1990

The Clean Air Act Amendments of 1990, which were signed into law on November 15, 1990, are designed to curb acid rain, urban air pollution, and toxic air emissions, all major health and environmental hazards. Regulations affecting the type of fuels produced, particularly oxygenated and reformulated gasoline, and dates for implementing these regulations are:

Summer 1992: The maximum RVP; i.e., volatility level⁷ for gasoline during the summer is limited to 9 pounds per square inch (psi) in most areas of the country.

November 1992: Only "oxygenated" gasoline can be sold during the wintertime in approximately 40 cities classified as moderate or serious carbon monoxide nonattainment areas.⁸ Oxygenated gasoline must contain at least 2.7 percent oxygen (by weight), but is not required to meet the rest of the specifications for reformulated gasoline (see below).

October 1993: The maximum allowable sulfur content of on-highway diesel fuel oils will be reduced to 0.05 percent (by weight), and the minimum cetane index will be 40.

January 1995: New programs requiring cleaner (reformulated) gasoline will be initiated for the nine cities⁹ with the worst ozone (smog) problems. States may petition the Environmental Protection Agency (EPA) to have the same reformulated gasoline rules apply to areas other than the nine designated cities. However, the EPA can delay the effective date of such "opt ins" for up to 3 years if, after consulting with the Secretary of Energy, it determines that there is not enough capacity to produce reformulated gasoline. Reformulated gasoline must meet a specific formula. Gasolines are not to

exceed 1.0 percent (by volume) benzene content or 25 percent (by volume) aromatic content. The basic formula also requires that reformulated gasoline contains at least 2.0 percent (by weight) oxygen content. Compared with baseline gasoline,¹⁰ reformulated gasoline must result in a 15-percent reduction in the total emissions of ozone-forming volatile organic compounds (VOC's) and air toxics, increasing to a reduction of 20 to 25 percent by the year 2000. All gasoline must contain additives to control engine deposits.

January 1996: Leaded gasoline will be banned completely.

Impact on Refiners

While several firms are currently marketing what they classify as "reformulated" gasolines, these products represent only a limited portion of the total gasoline sales of these companies and are produced with only minor changes in refinery operations. However, the production of larger amounts of reformulated gasoline in the stricter formulations would require substantial changes in refinery operations and will consist of both changes in the operation of existing units and the addition of new units. Some industry officials have estimated that reconfiguring refineries might require capital investments of \$20 billion to \$30 billion to reformulate all gasoline.¹¹

The oxygen provision of the new law will be among the most challenging for refiners to meet. All oxygenates reduce carbon monoxide emissions from vehicles and boost the octane level of gasoline, but their effects on volatility vary. Methyl tertiary butyl ether (MTBE) has been widely accepted by refiners as the oxygenate of choice because it reduces volatility of motor gasoline and is quite effective in reducing exhaust emissions, especially carbon monoxide, from new and older vehicles.¹² MTBE capacity in the United States is currently at about 115,000 barrels per day, and an additional 138,000 barrels per day is scheduled to be completed by 1994.¹³ As the requirement for reformulated gasoline grows, demand for MTBE and other oxygenates will increase, and additional MTBE plants and other types of oxygenate-producing plants will need to be constructed.

Another major challenge faced by refiners will be that of the required aromatics reduction in reformulated gasolines. In recent years, refiners have blended more aromatics into gasoline to replace the octane lost as a result of lead reduction. Aromatics, in general, are high-octane hydrocarbons that

⁷ The measure of the tendency of gasolines to evaporate into the atmosphere.

⁸ The new law allows the Environmental Protection Agency to define the boundaries of nonattainment areas; i.e., geographical areas whose air quality does not meet Federal air quality standards designed to protect public health.

⁹ These cities include Los Angeles, Hartford, Houston, New York, Baltimore, Chicago, San Diego, Philadelphia, and Milwaukee.

¹⁰ The term "baseline gasoline" refers to an average 1990 gasoline. The Amendments specifically define a baseline gasoline for the summer that includes a volatility rating of 8.79 psi, benzene content of 1.53 percent, and aromatics of 32.09 percent. The baseline for winter is still to be determined.

¹¹ U.S. General Accounting Office Report to the Chairman, Subcommittee on Energy and Power, Committee on Energy and Commerce, House of Representatives, "Gasoline Marketing, Uncertainties Surround Reformulated Gasoline as a Motor Fuel," June 1990, p. 7.

¹² *The Oil Daily*, "Merits of MTBE in Gasoline Reformulation Efforts Cited by Oil/Auto Industry Group," December 19, 1990, p. 1.

¹³ National Petroleum Refiners Association, December 1990.

currently constitute about 35 percent of gasoline, but this must be reduced to no more than 25 percent by 1995. The aromatics in gasoline include benzene, toluene, and xylene. In addition to concerns about the toxicity of benzene, some aromatics are highly reactive chemically and, therefore, are active in ozone formation. Aromatics originate primarily from catalytic reformers and from catalytic cracking units. The volume of aromatics produced during these processes can be reduced with operating strategies, such as hydrotreating the feedstock to these units and reducing reformer severity. Improved unit and catalyst technologies will also be needed to increase product yield and quality.

In order to comply with volatility reductions, refiners must reduce the highly-combustible butane content of gasoline. Lowering volatility means less evaporation of organic compounds that contribute to air pollution. For many refiners, this will require the installation of debutanizing equipment. The butane generated as a byproduct can either be sold to the petrochemical industry or converted to isobutane to produce MTBE or used in alkylation units to produce alkylate.

The new clean fuel requirements will boost the importance of the alkylation process in U.S. refineries because it produces alkylate, one of the highest quality components in reformulated gasoline. Alkylate has high octane value with no aromatics and low volatility. Alkylates burn freely, promote long engine life, and have low levels of toxic emissions. Additional alkylation capacity will be needed in the future as well as additional isomerization capacity which will be needed in order to meet the growing demand for isobutane, a feedstock to alkylation units.

As the quality of crude oil declines in the future and more heavy residuals must be processed to maintain or increase the volume of light products, more catalytic hydrocracking capacity will be needed. However, hydrocrackers are very expensive to build and are costly to operate due to the large amounts of expensive hydrogen consumed during the process. Thus, hydrocrackers must be used in conjunction with either a reforming unit, which generates hydrogen, or a hydrogen plant. Refineries not presently configured to meet hydrogen needs will be at a disadvantage due to the high capital and operating costs involved with catalytic hydrocracking.

The capacity for hydrotreaters, or desulfurization units, will need to be increased due to the decline in the quality of crude oil and tougher Federal regulations on the maximum allowable sulfur content of on-highway diesel fuel oils. The sulfur and aromatics reduction requirements of the new law will put pressure on hydrotreating operations in many refineries. However, new hydrotreating catalysts have been designed which have improved activity and longer life formulations that cut sulfur and aromatics in distillate fractions without requiring substantially higher pressure operation or heavy capital investment in new units.¹⁴

In addition to the new construction and modification of downstream processing units, refiners will be met with storage and distribution difficulties. Separate storage tanks will need to be built for reformulated gasoline, as well as tanks segregating low and high-sulfur diesel fuels. Integral components of reformulated gasoline are the alcohols, methanol and ethanol, which must be stored separately and are difficult to transport through existing U.S. pipeline systems. These systems have never been fitted to completely exclude all water. If a gasoline blend includes alcohols, contact with small amounts of water can cause phase separation in pipelines; i.e., the alcohols separate from the gasoline. Therefore, this gasoline must be transported in some way other than pipelines, such as tankcars, trucks, or barges.

The requirements that the refining industry will face in the next 10 to 20 years are not fully known because implementation of the Clean Air Act Amendments of 1990 is barely under way. Recognizing this uncertainty, the Department of Energy has commissioned the National Petroleum Council to conduct a two-phase study. The first phase will produce a report by June 1991 that will address the capabilities of the U.S. refining industry to meet consumer needs, considering especially the requirements of the Amendments. The second phase, to be completed in 1992, will provide analysis of the time and investments necessary to meet new environmental regulations, and their effects on petroleum product supply and prices. These studies will provide important information useful in managing the potentially profound changes engendered by the Amendments in the transportation fuels market.

¹⁴ *Oil and Gas Journal*, "New Catalyst Designs Meet Environmental Challenges of the 1990's," October 1, 1990, p. 49.

Table 36. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 1991

PAD District and State	Number of Operable Refineries			Atmospheric Crude Oil Distillation Capacity					
				Barrels per Calendar Day			Barrels per Stream Day		
	Total	Operating	Idle ^a	Total	Operating	Idle	Total	Operating	Idle
PAD District I	22	19	3	1,490,805	1,338,405	152,400	1,565,400	1,403,000	162,400
Delaware	1	1	0	140,000	140,000	0	152,000	152,000	0
Georgia	2	1	1	33,540	5,540	28,000	36,000	6,000	30,000
New Jersey	6	4	2	458,900	334,500	124,400	484,400	352,000	132,400
New York	1	1	0	41,850	41,850	0	45,000	45,000	0
North Carolina	1	1	0	3,000	3,000	0	3,000	3,000	0
Pennsylvania	8	8	0	744,315	744,315	0	772,500	772,500	0
Virginia	2	2	0	56,700	56,700	0	60,000	60,000	0
West Virginia	1	1	0	12,500	12,500	0	12,500	12,500	0
PAD District II	40	39	1	3,328,850	3,327,600	1,250	3,498,803	3,496,303	2,500
Illinois	7	7	0	937,600	937,600	0	994,000	994,000	0
Indiana	5	4	1	431,150	429,900	1,250	445,600	443,100	2,500
Kansas	8	8	0	351,700	351,700	0	374,483	374,483	0
Kentucky	2	2	0	218,900	218,900	0	226,300	226,300	0
Michigan	3	3	0	118,600	118,600	0	129,000	129,000	0
Minnesota	2	2	0	267,100	267,100	0	279,220	279,220	0
North Dakota	1	1	0	58,000	58,000	0	60,000	60,000	0
Ohio	4	4	0	457,100	457,100	0	477,000	477,000	0
Oklahoma	6	6	0	395,500	395,500	0	416,200	416,200	0
Tennessee	1	1	0	60,000	60,000	0	62,000	62,000	0
Wisconsin	1	1	0	33,200	33,200	0	35,000	35,000	0
PAD District III	72	64	8	7,206,957	6,766,807	440,150	7,628,807	7,121,307	507,500
Alabama	3	2	1	140,100	113,500	26,600	144,300	116,300	28,000
Arkansas	3	3	0	59,700	53,900	5,800	63,000	57,000	6,000
Louisiana	22	19	3	2,627,207	2,286,707	340,500	2,783,900	2,388,900	395,000
Mississippi	6	5	1	368,400	362,400	6,000	390,900	383,000	7,900
New Mexico	4	3	1	78,800	74,800	4,000	85,207	79,107	6,100
Texas	34	32	2	3,932,750	3,875,500	57,250	4,161,500	4,097,000	64,500
PAD District IV	18	17	1	555,075	539,875	15,200	582,250	566,250	16,000
Colorado	3	2	1	91,200	76,000	15,200	101,000	85,000	16,000
Montana	4	4	0	139,650	139,650	0	145,500	145,500	0
Utah	6	6	0	154,500	154,500	0	160,000	160,000	0
Wyoming	5	5	0	169,725	169,725	0	175,750	175,750	0
PAD District V	50	45	5	3,093,940	2,986,090	107,850	3,281,254	3,165,100	116,154
Alaska	6	6	0	239,540	239,540	0	254,700	254,700	0
Arizona	1	1	0	10,000	10,000	0	12,000	12,000	0
California	32	29	3	2,185,600	2,094,150	91,450	2,316,100	2,217,400	98,700
Hawaii	2	2	0	146,300	146,300	0	150,000	150,000	0
Nevada	1	0	1	4,500	0	4,500	4,700	0	4,700
Oregon	1	1	0	0	0	0	0	0	0
Washington	7	6	1	508,000	496,100	11,900	543,754	531,000	12,754
U.S. Total	202	184	18	15,675,627	14,958,777	716,850	16,556,514	15,751,960	804,554
Puerto Rico	5	5	0	209,800	209,800	0	222,310	222,310	0
Virgin Islands	1	1	0	545,000	470,000	75,000	595,000	510,000	85,000

See footnote at end of table.

Table 36. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 1991 (Continued)

PAD District and State	Downstream Charge Capacity (Barrels per Stream Day)							
	Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming	Catalytic Hydrocracking	Catalytic Hydrotreating	Fuels Solvent Deasphalting
			Fresh	Recycled				
PAD District I	737,150	80,000	597,500	50,800	345,800	90,440	917,260	0
Delaware	95,000	45,000	67,000	5,000	54,000	18,000	123,000	0
Georgia	0	0	0	0	0	0	2,940	0
New Jersey	258,900	21,000	256,000	37,000	77,500	17,000	289,000	0
New York	28,000	0	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0	0	0
Pennsylvania	320,250	0	247,000	6,800	200,400	51,000	471,820	0
Virginia	29,000	14,000	27,500	2,000	10,200	0	26,500	0
West Virginia	6,000	0	0	0	3,700	4,440	4,000	0
PAD District II	1,407,500	382,600	1,294,800	52,300	928,600	162,890	1,995,400	39,800
Illinois	383,900	126,300	378,000	10,000	302,300	67,500	617,600	0
Indiana	235,450	28,000	173,000	4,200	99,800	0	267,800	5,000
Kansas	124,650	52,500	123,800	9,000	93,800	3,190	211,000	5,500
Kentucky	92,000	57,600	100,000	0	46,000	0	172,300	10,000
Michigan	38,000	0	47,000	1,000	33,000	0	61,800	0
Minnesota	182,000	60,000	83,000	1,000	59,500	0	227,000	0
North Dakota	0	0	26,000	3,600	12,100	0	19,100	0
Ohio	172,000	31,700	174,000	17,500	162,600	87,200	196,500	9,000
Oklahoma	147,000	26,500	149,000	5,000	101,500	5,000	177,500	10,300
Tennessee	12,000	0	30,000	0	10,000	0	30,000	0
Wisconsin	20,500	0	11,000	1,000	8,000	0	14,800	0
PAD District III	3,208,075	1,050,000	2,670,900	149,275	1,832,150	554,500	4,817,250	143,000
Alabama	45,000	12,000	0	0	26,000	0	59,300	0
Arkansas	23,300	0	19,100	775	11,200	0	30,000	5,500
Louisiana	1,132,200	580,700	895,500	11,500	530,300	172,000	1,267,500	35,000
Mississippi	274,775	83,500	80,000	7,000	96,000	68,000	254,000	0
New Mexico	13,900	0	33,800	4,500	21,050	1,000	29,800	0
Texas	1,718,900	373,800	1,642,500	125,500	1,147,600	313,500	3,176,650	102,500
PAD District IV	216,430	29,400	200,200	30,350	123,480	12,300	248,740	16,500
Colorado	43,000	4,200	27,500	1,000	22,900	5,000	35,700	0
Montana	53,450	7,700	55,900	6,250	37,730	4,900	119,340	11,500
Utah	46,980	8,500	54,800	10,600	30,500	2,400	41,200	5,000
Wyoming	73,000	9,000	62,000	12,500	32,350	0	52,500	0
PAD District V	1,706,350	615,900	795,200	21,000	695,800	487,800	1,697,680	71,500
Alaska	6,000	0	0	0	12,000	9,000	0	0
Arizona	7,000	0	0	0	0	0	0	0
California	1,347,600	530,900	656,700	14,000	542,300	408,800	1,475,180	50,000
Hawaii	74,250	13,000	20,000	0	13,000	18,000	3,500	0
Nevada	0	0	0	0	0	0	0	0
Oregon	16,000	0	0	0	0	0	0	0
Washington	255,500	72,000	118,500	7,000	128,500	52,000	219,000	21,500
U.S. Total	7,275,505	2,157,900	5,558,600	303,725	3,925,830	1,307,930	9,676,330	270,800
Puerto Rico	65,000	0	14,200	0	79,300	15,600	100,600	0
Virgin Islands	215,000	85,000	0	0	115,000	0	420,000	0

* Refineries where distillation units are completely idle but not permanently shutdown on January 1, 1991.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 37. Production Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 1990
(Barrels per Stream Day, Except Where Noted)

PAD District and State	Production Capacity							Sulfur (short ton per day)
	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	
PAD District I	92,000	177,710	19,170	46,250	32,806	114	19,680	4,430
Delaware	11,500	0	3,370	0	0	40	9,080	350
Georgia	0	25,560	0	0	0	0	0	0
Maryland	0	11,300	0	0	0	0	0	0
New Jersey	29,500	94,850	3,500	34,300	8,500	17	5,500	3,590
New York	0	13,000	0	0	0	0	0	0
Pennsylvania	51,000	33,000	12,300	11,950	19,250	56	0	420
Virginia	0	0	0	0	0	0	5,100	70
West Virginia	0	0	0	0	5,056	1	0	0
PAD District II	273,600	290,800	56,369	160,843	31,700	174	72,524	3,240
Illinois	95,500	42,700	8,000	7,800	4,600	42	23,469	1,280
Indiana	36,900	53,500	14,000	24,200	6,400	10	10,540	550
Kansas	36,300	10,000	10,169	40,000	2,500	0	10,300	240
Kentucky	12,000	30,000	6,000	12,250	8,500	20	0	200
Michigan	9,200	28,000	0	1,100	0	0	0	90
Minnesota	15,500	69,000	0	23,300	0	20	16,000	510
North Dakota	4,300	0	0	5,100	0	0	0	10
Ohio	25,800	21,800	16,000	10,693	200	72	6,190	240
Oklahoma	34,000	18,800	2,200	30,400	9,500	10	6,025	40
Tennessee	2,500	3,500	0	4,000	0	0	0	40
Wisconsin	1,600	13,500	0	2,000	0	0	0	10
PAD District III	521,550	189,345	213,875	246,345	134,725	1,057	158,405	10,970
Alabama	0	17,500	0	800	0	6	2,000	140
Arkansas	4,500	10,550	0	5,000	3,235	1	0	20
Louisiana	194,700	50,470	22,000	92,120	38,490	222	81,400	3,130
Mississippi	20,700	41,700	5,500	0	5,000	217	21,600	1,260
New Mexico	5,000	4,100	0	4,000	0	1	0	0
Texas	296,650	65,025	186,375	144,425	88,000	610	53,405	6,410
PAD District IV	36,030	51,850	400	15,750	0	27	6,375	120
Colorado	1,200	5,000	0	0	0	6	1,000	30
Montana	13,780	26,700	400	5,350	0	21	2,175	30
Utah	11,400	3,200	0	6,900	0	0	1,750	10
Wyoming	9,650	16,950	0	3,500	0	0	1,450	40
PAD District V	154,300	156,433	2,500	21,150	30,000	1,155	109,680	5,100
Alaska	0	8,600	2,500	4,000	0	13	0	0
Arizona	0	2,000	0	0	0	0	0	0
California	122,800	116,533	0	12,900	30,000	1,042	91,180	4,700
Hawaii	4,500	1,800	0	1,500	0	20	0	0
Oregon	0	11,500	0	0	0	0	0	0
Washington	27,000	16,000	0	2,750	0	80	18,500	200
U.S. Total	1,077,480	866,138	292,314	490,338	229,231	2,527	366,664	23,870
Puerto Rico	0	1,000	15,000	0	9,500	19	0	0
Virgin Islands	0	0	20,000	18,000	0	0	0	50

MMcfd = Million cubic feet per day.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Directory of Operable Petroleum Refineries on Table 38

Refiner	Page(s)	Refiner	Page(s)
Amerada Hess Corp.	106, 107, 118, 119	Landmark Petroleum Inc.	98, 99
American International Refinery Inc.	102, 103	Leal Petroleum Corp.	112, 113
Amoco Oil Co.	98, 99, 100, 101, 108, 109, 110, 111, 114, 115, 116, 117	Lion Oil Co.	94, 95
Anchor Refining Co. Inc.	94, 95	Little America Refining Co.	116, 117
Arco Alaska Inc.	94, 95	LL&E Petroleum Marketing	94, 95
Arco Products Co.	94, 95, 116, 117	Longview Refining Associates	112, 113
Arochem International Inc.	118, 119	Lunday Thagard Co.	96, 97
Ashland Oil Inc.	102, 103, 104, 105, 108, 109	Lyondell Petrochemical Co.	112, 113
Barrett Refining Corp.	108, 109	Mapco Petroleum Inc.	94, 95, 110, 111
Berry Petroleum Co.	94, 95	Marathon Petroleum Co.	100, 101, 102, 103, 104, 105, 112, 113
Big West Oil Co.	114, 115	Mobil Oil Corp.	96, 97, 100, 101, 104, 105, 106, 107, 112, 113
Bloomfield Refining Co.	108, 109	Montana Refining Co.	106, 107
BP Oil Corp.	102, 103, 108, 109, 110, 111, 116, 117	Murphy Oil U.S.A. Inc.	104, 105, 116, 117
Calcasieu Refining Co.	102, 103	National Cooperative Refinery Association	100, 101
Calumet Lubricants Co. L.P.	102, 103	Navajo Refining Co.	108, 109
Canal Refining Co.	102, 103	Pacific Refining Co.	96, 97
Caribbean Gulf Refining Corp.	118, 119	Paramount Petroleum Corp.	96, 97
CAS Refining Co.	102, 103	Peerless Oil & Chemical	118, 119
Comex	106, 107	Pennzoil Products Co.	104, 105, 110, 111, 114, 115
Champion Refining & Chemical Inc.	110, 111	Petro Source Refining Partners	106, 107
Chemoil Refining Corp.	94, 95	Petro Source Resources Inc.	106, 107
Chevron U.S.A. Inc.	94, 95, 96, 97, 98, 99, 104, 105, 106, 107, 110, 111, 114, 115, 116, 117	Petro Star Inc.	94, 95
Cibro Petroleum Products Inc.	108, 109	Petrolite Corp.	112, 113
Citgo Petroleum Corp.	102, 103	Petrowax Pennsylvania Inc.	110, 111
Claiborne Gasoline Co.	102, 103	Phillips Puerto Rico Core Inc.	118, 119
Clark Oil & Refining Corp.	100, 101	Phillips 66 Co.	114, 115
Coastal Derby Refining Co.	100, 101	Placid Refining Co.	104, 105
Coastal Eagle Point Oil Co.	106, 107	Powerine Oil Co.	96, 97
Coastal Mobile Refining Co.	94, 95	Pride Refining Inc.	114, 115
Coastal Refining & Marketing Inc.	112, 113	Primary Oil & Energy Corp.	116, 117
Colorado Refining Co.	98, 99	Quaker State Oil Refining Corp.	116, 117
Conoco Inc.	96, 97, 98, 99, 102, 103, 106, 107, 108, 109	Rattlesnake Refining Corp.	114, 115
Cross Oil & Refining Co. Inc.	94, 95	Rock Island Refining Corp.	100, 101
Crown Central Petroleum Corp.	112, 113	San Joaquin Refining Co. Inc.	96, 97
Crysen Refining Inc.	114, 115	Seaview Petroleum Inc.	106, 107
Crystal Refining Co.	104, 105	Shell Oil Co.	96, 97, 100, 101, 104, 105, 114, 115, 116, 117
Diamond Shamrock Refining & Marketing Co.	112, 113	Sinclair Oil Corp.	108, 109, 116, 117
Dubach Gas Co.	102, 103	Somerset Refinery Inc.	102, 103
Eco Asphalt Inc.	96, 97	Sound Refining Inc.	116, 117
Edgington Oil Co.	96, 97	South Hampton Refining Co.	114, 115
El Paso Refining Co. Ltd.	112, 113	Southland Oil Co.	106, 107
Ergon Inc.	106, 107	Southwestern Refining Co. Inc.	114, 115
Exxon Co. U.S.A.	96, 97, 102, 103, 106, 107, 112, 113	Star Enterprise	98, 99, 104, 105, 114, 115
Farmiland Industries Inc.	100, 101	Sun Co Inc.	108, 109, 110, 111, 118, 119
Fina Oil & Chemical Co.	112, 113	Sun Refining & Marketing	110, 111
Fletcher Oil & Refining Co.	96, 97	Sunbelt Refining Co.	94, 95
Frontier Refining Co.	116, 117	Sunland Refining Corp.	96, 97
Giant Refining Co.	108, 109	Tenby Inc.	96, 97
GNC Energy Corp.	108, 109	Tesoro Petroleum Corp.	94, 95
Golden West Refining Co.	96, 97	Texaco Refining & Marketing Inc.	98, 99, 100, 101, 116, 117
Hawaiian Independent Refinery Inc.	98, 99	Thriftway Co.	108, 109
Hill Petroleum Co.	102, 103, 112, 113	Tosco Corp.	98, 99
Howell Hydrocarbons Corp.	112, 113	Total Petroleum Inc.	102, 103, 104, 105, 108, 109
Hunt Refining Co.	94, 95	Trans-America Refining Co.	104, 105
Huntway Refining Co.	96, 97	Trifinery	114, 115
Indian Refining	100, 101	U.S. Oil & Refining Co.	116, 117
Indiana Farm Bureau Cooperative Association	100, 101	Ultramar Refining	98, 99
Inter-Coastal Energy Services Corp.	100, 101	United Refining Co.	110, 111
Kem Oil & Refining Co.	96, 97	Uno-Ven Co.	100, 101
Kerr-McGee Refining Corp.	102, 103, 108, 109	Unocal Corp.	98, 99
Koch Refining Co.	104, 105, 112, 113	Valero Refining Co.	114, 115
La Gloria Oil & Gas Co.	112, 113	Witco Corp.	98, 99, 110, 111
Lakeston Refining Corp.	100, 101	Wyoming Refining Co.	118, 119
		Young Refining Corp.	98, 99

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Alabama	113,500	26,600	116,300	28,000	45,000	12,000	0	0	26,000
Coastal Mobile Refining Co.									
Chickasaw	0	26,600	0	28,000	10,000	0	0	0	0
Hunt Refining Co.									
Tuscaloosa	33,500	0	35,000	0	15,000	^a 12,000	0	0	^b 6,000
LL&E Petroleum Marketing									
Saraland (Mobile)	80,000	0	81,300	0	20,000	0	0	0	^c 20,000
Alaska	239,540	0	254,700	0	6,000	0	0	0	12,000
Arco Alaska Inc.									
Anchorage	12,000	0	13,000	0	0	0	0	0	0
Prudhoe Bay	13,740	0	17,000	0	0	0	0	0	0
Chevron U.S.A. Inc.									
Kenai	22,000	0	22,500	0	0	0	0	0	0
Mapco Petroleum Inc.									
North Pole	112,800	0	115,000	0	6,000	0	0	0	0
Petro Star Inc.									
North Pole	7,000	0	7,200	0	0	0	0	0	0
Tesoro Petroleum Corp.									
Kenai	72,000	0	80,000	0	0	0	0	0	^b 12,000
Arizona	10,000	0	12,000	0	7,000	0	0	0	0
Sunbelt Refining Co.									
Coolidge	10,000	0	12,000	0	7,000	0	0	0	0
Arkansas	53,900	5,800	57,000	6,000	23,300	0	19,100	775	11,200
Berry Petroleum Co.									
Stephens	5,000	0	6,000	0	1,500	0	0	0	0
Cross Oil & Refining Co. Inc.									
Smackover	6,700	0	7,000	0	3,300	0	0	0	0
Lion Oil Co.									
El Dorado	42,200	5,800	44,000	6,000	18,500	0	19,100	775	^b 11,200
California	2,094,150	91,450	2,217,400	98,700	1,347,600	530,900	656,700	14,000	542,300
Anchor Refining Co. Inc.									
McKittrick	10,000	0	11,000	0	6,000	0	0	0	0
Arco Products Co.									
Los Angeles	223,000	0	235,000	0	112,000	^a 56,000	82,000	0	^c 48,000
Chemoil Refining Corp.									
Long Beach	14,200	0	16,200	0	0	0	0	0	0
Chevron U.S.A. Inc.									
El Segundo	254,000	0	279,000	0	114,000	^a 61,000	62,000	0	^b 27,000 ^d 24,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Desasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Alabama	0	59,300	0	0	17,500	0	800	0	6	2,000	140
Chickasaw	0	0	0	0	8,000	0	0	0	0	0	0
Tuculosa	0	^c 9,800 ^d 7,500 ^e 5,000	0	0	9,500	0	0	0	6	2,000	80
Saratland (Mobile)	0	^c 15,000 ^d 22,000	0	0	0	0	^g 800	0	0	0	60
Alaska	9,000	0	0	0	8,600	2,500	4,000	0	13	0	15
Anchorage	0	0	0	0	0	0	0	0	0	0	0
Prudhoe Bay	0	0	0	0	0	0	0	0	0	0	0
Kanai	0	0	0	0	6,000	0	0	0	0	0	0
North Pole	0	0	0	0	2,600	2,500	0	0	0	0	0
North Pole	0	0	0	0	0	0	0	0	0	0	0
Kanai	9,000	0	0	0	0	0	^h 4,000	0	13	0	15
Arizona	0	0	0	0	2,000	0	0	0	0	0	0
Coolidge	0	0	0	0	2,000	0	0	0	0	0	0
Arkansas	0	30,000	5,500	4,500	10,550	0	5,000	3,235	1	0	21
Stephens	0	0	0	0	800	0	0	0	0	0	0
Snackover	0	ⁱ 3,000	0	0	2,050	0	0	3,235	1	0	0
El Dorado	0	^d 20,000 ^e 7,000	5,500	4,500	7,700	0	^h 5,000	0	0	0	21
California	408,800	1,475,180	50,000	122,800	116,533	0	12,900	30,000	1,042	91,180	4,764
McKittrick	0	0	0	0	2,750	0	0	0	0	0	0
Los Angeles	22,000	^c 75,000 ^d 40,000 ^e 18,000 ⁱ 18,000	0	14,000	0	0	0	0	70	11,000	260
Long Beach	0	0	0	0	0	0	0	0	0	0	0
El Segundo	45,000	^c 100,000 ^d 56,000 ^e 14,000	0	8,000	0	0	0	0	130	16,500	840

^a Delayed Coking ^b Low Pressure ^c Heavy Gas Oil ^d Naph./Ref. Feeds ^e Distillate ^f High Pressure
^g C₄ ^h C₅ and C₆ ⁱ Other/Residual ^j Fluid Coking ^k Visbreaking ^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

* Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity					
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming	
	Operating	Idle	Operating	Idle			Fresh	Recycled		
California (Continued)										
Chevron U.S.A. Inc. (Continued)										
Richmond	270,000	0	280,000	0	175,000	0	63,000	0	^b 60,000	
Conoco Inc.										
Santa Maria	9,500	0	10,000	0	7,800	0	0	0	0	
Eco Asphalt Inc.										
Long Beach*	0	10,550	0	11,000	6,700	0	0	0	0	
Edgington Oil Co.										
Long Beach	E ₀	E _{41,600}	E ₀	E _{44,800}	E _{27,000}	E ₀	E ₀	E ₀	E ₀	
Exxon Co. U.S.A.										
Benicia	128,000	0	132,000	0	67,000	ⁱ 27,500	65,000	11,000	ⁱ 32,000	
Fletcher Oil & Refining Co.										
Carson	28,350	0	30,000	0	19,000	0	12,200	0	ⁱ 5,100	
Golden West Refining Co.										
Santa Fe Springs	47,000	0	50,000	0	25,000	^k 13,800	13,500	0	ⁱ 19,000	
Huntway Refining Co.										
Benicia	8,600	0	9,000	0	7,600	0	0	0	0	
Wilmington	5,500	0	6,000	0	4,900	0	0	0	0	
Kern Oil & Refining Co.										
Bakersfield	21,400	0	23,000	0	0	0	0	0	ⁱ 2,800	
Lunday Thagard Co.										
South Gate	8,100	0	8,500	0	7,000	0	0	0	0	
Mobil Oil Corp.										
Torrance	123,000	0	130,000	0	95,000	^a 48,000	63,000	0	ⁱ 36,000	
Pacific Refining Co.										
Hercules	55,000	0	57,000	0	25,000	^k 11,000	0	0	ⁱ 11,200	
Paramount Petroleum Corp.										
Paramount	46,500	0	48,000	0	28,000	0	0	0	ⁱ 11,500	
Powerine Oil Co.										
Santa Fe Springs	30,000	15,000	30,900	15,900	24,000	^a 10,000	13,000	0	ⁱ 9,200	
San Joaquin Refining Co. Inc.										
Bakersfield	0	24,300	0	27,000	12,000	^k 5,000	0	0	0	
Shell Oil Co.										
Carson (Wilmington)	120,000	0	125,000	0	75,000	^a 53,000	42,000	0	ⁱ 24,000	
Martinez										
.....	140,100	0	148,000	0	101,500	ⁱ 21,000	66,000	1,000	^b 28,000	
Sunland Refining Corp.										
Bakersfield	12,000	0	17,000	0	0	0	0	0	0	
Tenby Inc.										
Oxnard	4,000	0	5,000	0	0	0	0	0	0	

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydrocracking	Catalytic Hydrotreating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
California (Continued)											
Richmond.....	110,500	^c 60,000 ^d 66,000 ^e 65,000 ⁱ 18,200	50,000	7,000	11,000	0	0	11,000	150	0	672
Santa Maria.....	0	0	0	0	6,800	0	0	0	0	0	0
Long Beach.....	0	0	0	0	3,850	0	0	0	0	0	0
Long Beach.....	E ₀	E ₀	E ₀	E ₀	E _{18,000}	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀
Benicia.....	32,000	^c 37,000 ^d 49,000 ^e 25,000 ⁱ 17,000	0	14,000	0	0	0	0	104	5,500	304
Carson.....	0	^c 12,500	0	0	6,800	0	0	0	0	0	15
Santa Fe Springs.....	11,000	^d 12,000	0	3,000	13,000	0	0	0	11	0	30
Benicia.....	0	0	0	0	4,500	0	0	0	0	0	0
Wilmington.....	0	0	0	0	2,800	0	0	0	0	0	0
Boleynfield.....	0	^d 5,000	0	0	0	0	0	0	0	0	0
South Gate.....	0	0	0	0	5,833	0	0	0	0	0	0
Torrance.....	21,700	^c 68,000 ^d 21,000 ^e 28,000	0	17,000	0	0	0	0	137	14,500	441
Hercules.....	4,000	^d 11,200	0	0	2,000	0	0	0	0	0	0
Paramount.....	0	^e 7,000 ⁱ 21,500	0	0	15,000	0	0	0	0	0	0
Santa Fe Springs.....	7,800	^c 9,500 ^d 8,500 ^e 4,200 ⁱ 2,500	0	2,400	0	0	^g 1,500	0	19	3,000	0
Boleynfield.....	0	0	0	0	8,000	0	0	4,000	0	0	0
Carson (Wilmington).....	0	^c 11,000 ^d 25,000 ^e 57,000 ⁱ 14,000	0	8,600	0	0	0	0	36	12,500	440
Porter.....	28,000	^c 50,000 ^d 18,000 ^e 34,000 ⁱ 24,300	0	9,000	11,000	0	0	4,500	118	660	237
Boleynfield.....	0	0	0	0	0	0	0	0	0	0	0
Porter.....	0	0	0	0	1,200	0	0	0	0	0	0

^a Delayed Coking
^c C₄

^b Low Pressure
^h C₃ and C₆

^c Heavy Gas Oil
ⁱ Other/Residual

^d Naph./Ref. Feeds
^j Fluid Coking

^e Distillate
^k Visbreaking

^f High Pressure
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

^g Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
California (Continued)									
Texaco Refining & Marketing Inc.									
Bakersfield	48,000	0	49,000	0	23,000	^a 13,700	0	0	^f 22,000
Wilmington (Los Angeles)	64,000	0	70,000	0	54,000	^a 75,000	30,000	0	^f 39,000
Tosco Corp.									
Martinez (Avon)	131,900	0	143,000	0	118,000	ⁱ 46,000	60,000	2,000	^b 23,000 ^f 20,000
Ultramar Refining									
Wilmington	66,000	0	68,000	0	40,000	^a 23,000	38,000	0	^b 14,500
Unocal Corp.									
Arroyo Grande (Santa Maria)	41,000	0	44,000	0	32,000	^a 23,200	0	0	0
Rodeo (San Francisco)	77,000	0	81,800	0	42,100	^a 23,700	0	0	^f 34,000
Wilmington (Los Angeles)	108,000	0	111,000	0	89,000	^k 20,000	47,000	0	^b 36,000 ^f 16,000
Witco Corp.									
Oildale	0	0	0	0	10,000	0	0	0	0
Colorado	76,000	15,200	85,000	16,000	43,000	4,200	27,500	1,000	22,900
Colorado Refining Co.									
Commerce City	28,000	0	35,000	0	10,000	0	3,500	0	^b 9,500
Conoco Inc.									
Commerce City	48,000	0	50,000	0	23,000	0	19,000	1,000	^b 10,000
Landmark Petroleum Inc. (Formerly Western Slope Refining Co.)									
Fruita	0	15,200	0	16,000	10,000	^a 4,200	0	0	^f 3,400
Delaware	140,000	0	152,000	0	95,000	45,000	67,000	5,000	54,000
Star Enterprise									
Delaware City	140,000	0	152,000	0	95,000	ⁱ 45,000	67,000	5,000	^b 40,000 ^f 14,000
Georgia	5,540	28,000	6,000	30,000	0	0	0	0	0
Amoco Oil Co.									
Savannah	0	28,000	0	30,000	0	0	0	0	0
Young Refining Corp.									
Douglasville	5,540	0	6,000	0	0	0	0	0	0
Hawaii	146,300	0	150,000	0	74,250	13,000	20,000	0	13,000
Chevron U.S.A. Inc.									
Honolulu	52,800	0	55,000	0	31,250	0	20,000	0	0
Hawaiian Independent Refinery Inc.									
Ewa Beach	93,500	0	95,000	0	43,000	^k 13,000	0	0	^b 13,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
California (Continued)											
Bakersfield	14,300	^c 15,000 ^d 14,000	0	0	0	0	0	0	21	3,450	44
Wilmington (Los Angeles) ..	26,000	^c 30,000 ^d 22,000 ^e 15,000	0	6,300	0	0	0	0	63	9,850	392
Marine (Avon)	29,000	^c 50,000 ^d 12,000 ^e 22,000	0	13,000	0	0	0	0	80	1,500	200
Wilmington	0	^c 40,000 ^d 15,000	0	10,500	0	0	^g 4,000	0	0	1,250	120
Arroyo Grande (Santa Maria)	0	0	0	0	0	0	0	0	0	6,020	153
Rodeo (San Francisco)	32,500	^d 23,000 ^e 9,500 ⁱ 14,500	0	0	0	0	^h 7,400	4,500	65	5,450	392
Wilmington (Los Angeles) ..	25,000	^d 54,000 ^e 36,200	0	10,000	0	0	0	0	38	0	224
Orinda	0	^e 580	0	0	4,000	0	0	6,000	0	0	0
Colorado	5,000	35,700	0	1,200	5,000	0	0	0	6	1,000	31
Commerce City	0	^d 9,500	0	1,200	0	0	0	0	0	0	2
Commerce City	0	^d 10,000 ^e 12,800	0	0	5,000	0	0	0	0	0	19
Fruita	5,000	^d 3,400	0	0	0	0	0	0	6	1,000	10
Delaware	18,000	123,000	0	11,500	0	3,370	0	0	40	9,080	350
Delaware City	18,000	^d 64,000 ^e 59,000	0	11,500	0	3,370	0	0	40	9,080	350
Georgia	0	2,940	0	0	25,560	0	0	0	0	0	0
Savannah	0	0	0	0	22,500	0	0	0	0	0	0
Douglasville	0	^d 300 ^e 1,800 ⁱ 840	0	0	3,060	0	0	0	0	0	0
Hawaii	18,000	3,500	0	4,500	1,800	0	1,500	0	20	0	34
Honolulu	0	^b 3,500	0	4,500	1,300	0	^g 1,500	0	3	0	0
Ewa Beach	18,000	0	0	0	500	0	0	0	17	0	34

^a Delayed Coking
^c C₁

^b Low Pressure
^h C₅ and C₆

^c Heavy Gas Oil
ⁱ Other/Residual

^d Naph./Ref. Feeds
^j Fluid Coking

^e Distillate
^k Visbreaking

^f High Pressure
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

^g Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Illinois	937,800	0	994,000	0	383,900	126,300	378,000	10,000	302,300
Clark Oil & Refining Corp.									
Blue Island	64,600	0	68,000	0	27,000	0	25,000	0	^f 30,500
Hartford	57,000	0	60,000	0	18,000	^a 14,500	26,000	0	^f 12,000
Indian Refining									
Lawrenceville	55,000	0	57,000	0	30,000	0	34,000	0	^f 15,000
Marathon Petroleum Co.									
Robinson	160,000	0	170,000	0	50,000	^a 21,700 ⁱ 5,000	43,000	0	^b 39,500 ⁱ 36,500
Mobil Oil Corp.									
Joliet	180,000	0	200,000	0	88,000	^a 38,000	98,000	0	^f 48,000
Shell Oil Co.									
Wood River	274,000	0	286,000	0	108,000	^k 18,000	94,000	0	^b 75,000 ^f 18,000
Uno-Van Co.									
Lemont (Chicago)	147,000	0	153,000	0	62,900	^a 29,100	58,000	10,000	^f 29,800
Indiana	429,900	1,250	443,100	2,500	235,450	28,000	173,000	4,200	99,800
Amoco Oil Co.									
Whiting	350,000	0	360,000	0	203,000	^a 28,000	145,000	4,000	^f 85,000
Indiana Farm Bureau Cooperative Association									
Mount Vernon	21,200	0	22,600	0	7,200	0	8,000	200	^f 4,500
Inter-Coastal Energy Services Corp.									
Troy	0	1,250	0	2,500	2,250	0	0	0	0
Laketon Refining Corp.									
Laketon	8,700	0	9,500	0	6,000	0	0	0	0
Rock Island Refining Corp.									
Indianapolis	50,000	0	51,000	0	17,000	0	20,000	0	^f 10,300
Kansas	351,700	0	374,483	0	124,650	52,500	123,800	9,000	93,800
Coastal Derby Refining Co.									
Augusta	0	0	0	0	0	0	0	0	^b 7,500
El Dorado	30,400	0	32,000	0	10,000	0	10,000	2,000	0
Wichita	28,800	0	31,300	0	10,000	^a 5,000	19,800	2,500	^f 7,000
Farmland Industries Inc.									
Coffeyville	56,500	0	60,723	0	19,500	^a 13,000	23,000	1,500	^f 16,000
Phillipsburg	26,400	0	27,460	0	10,000	0	0	0	^f 5,300
National Cooperative Refinery Association									
McPherson	75,600	0	80,000	0	27,000	^a 22,000	20,000	500	^f 15,000
Texaco Refining & Marketing Inc.									
El Dorado	78,000	0	83,000	0	32,000	^a 12,500	31,500	2,500	^f 25,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Illinois	67,500	617,600	0	95,500	42,700	8,000	7,800	4,600	42	23,469	1,280
Isle Royale	11,000	^d 20,500	0	6,000	4,000	0	0	0	0	0	0
Joliet	0	^d 12,000 ^e 12,000	0	8,000	2,500	0	^h 4,000	0	3	3,750	110
Lawrenceville	0	^d 13,000 ^e 33,000	0	5,000	4,500	0	0	0	0	0	20
Robinson	23,000	^d 55,000 ^e 23,000 ⁱ 13,000	0	11,500	0	0	^h 3,800	0	0	6,000	44
St. Louis	0	^d 81,000 ^e 75,000	0	25,000	0	0	0	0	0	11,750	347
Wood River	33,500	^c 29,000 ^d 64,000 ^e 79,500 ⁱ 10,500	0	22,000	28,500	4,500	0	4,600	28	0	495
Unonot (Chicago)	0	^c 4,300 ^d 53,800 ^e 39,000	0	18,000	3,200	3,500	0	0	11	1,969	264
Indiana	0	267,800	5,000	36,900	53,500	14,000	24,200	6,400	16	10,541	554
Whiting	0	^c 90,300 ^d 112,000 ^e 45,000	0	29,000	45,000	14,000	^h 22,000	6,400	0	10,540	540
Mount Vernon	0	^d 6,000	0	1,700	2,200	0	^h 2,200	0	0	0	0
Troy	0	0	0	0	0	0	0	0	0	0	0
Valparaiso	0	0	0	0	3,800	0	0	0	0	0	0
Indianapolis	0	^d 14,500	5,000	6,200	2,500	0	0	0	10	0	14
Kansas	3,190	211,000	5,500	36,300	10,000	10,169	40,000	2,500	0	10,300	241
Ashtabula	0	^d 13,500	0	0	0	7,200	^h 5,500	0	0	0	0
El Dorado	0	^e 3,000	5,500	3,300	5,500	0	0	0	0	0	0
Wichita	0	^e 7,000	0	3,000	0	0	0	0	0	1,050	0
Colleyville	0	^d 26,500 ^e 5,000	0	6,000	0	0	^h 8,000	2,500	0	3,000	8
Philipsburg	0	^d 7,500	0	0	2,000	0	0	0	0	0	0
McPherson	0	^d 24,500 ^e 13,000	0	6,000	0	0	^h 2,000 ⁱ 9,500	0	0	3,200	46
El Dorado	0	^c 44,000 ^d 40,000 ^e 9,000	0	12,500	0	2,969	^h 15,000	0	0	3,050	175

^a Delayed Coking
^b Low Pressure
^c Heavy Gas Oil
^d Naph./Ref. Feeds
^e Distillate
^f High Pressure
^g C₄
^h C₅ and C₆
ⁱ Other/Residual
^j Fluid Coking
^k Visbreaking
^l Other/Gas Oil
E = Estimated. MMcfd = Million cubic feet per day.
* Reported no inputs during 1990.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Kansas (Continued)									
Total Petroleum Inc.									
Arkansas City	56,000	0	60,000	0	16,150	0	19,500	0	^b 12,000 ^c 6,000
Kentucky	218,900	0	226,300	0	92,000	57,800	100,000	0	46,000
Ashland Oil Inc.									
Catlettsburg	213,400	0	220,000	0	92,000	^k 2,600 ^l 55,000	100,000	0	^b 27,000 ^l 18,000
Somerset Refinery Inc.									
Somerset	5,500	0	6,300	0	0	0	0	0	^f 1,000
Louisiana	2,286,707	340,500	2,388,900	395,000	1,132,200	580,700	895,500	11,500	530,300
American International Refinery Inc.*									
Lake Charles	0	27,000	0	30,000	0	0	0	0	^b 12,000
BP Oil Corp.									
Belle Chasse (Alliance)	218,000	0	222,000	0	70,000	^a 18,000	90,000	2,000	^l 36,000
Calcasieu Refining Co.									
Lake Charles	13,500	0	13,500	0	0	0	0	0	0
Calumet Lubricants Co. L.P. (Formerly Calumet Refining Co.)									
Princeton	4,207	0	4,400	0	4,400	0	0	0	0
Canal Refining Co.									
Church Point	8,000	0	8,800	0	0	0	0	0	^b 1,900
Citgo Petroleum Corp.									
Lake Charles	305,000	0	320,000	0	75,000	^a 88,000	150,000	0	^b 86,000 ^l 20,000
Claiborne Gasoline Co.									
Lisbon	7,500	0	7,700	0	0	0	0	0	^b 2,000
Conoco Inc.									
Westlake	159,500	0	167,000	0	63,000	^a 60,000 ^l 12,000	42,500	0	^b 12,000 ^l 16,000
CAS Refining Co.									
Jennings (Mermentau)	0	13,500	0	15,000	0	0	0	0	0
Dubach Gas Co.									
Dubach	8,500	0	9,000	0	0	0	0	0	0
Exxon Co. U.S.A.									
Baton Rouge	421,000	0	438,000	0	183,000	^a 90,000	188,000	0	^b 80,000 ^l 30,000
Hill Petroleum Co.									
Krotz Springs	57,500	0	60,000	0	24,000	0	28,000	0	^f 10,400
Saint Rose	34,000	0	35,000	0	18,000	0	0	0	0
Kerr-McGee Refining Corp.									
Cotton Valley	7,800	0	8,500	0	0	0	0	0	0
Marathon Petroleum Co.									
Garyville	255,000	0	263,000	0	125,000	0	90,000	0	^b 50,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Kansas (Continued)											
Kansas City.....	3,190	^d 18,000	0	5,500	2,500	0	0	0	0	0	12
Kentucky.....	0	172,300	10,000	12,000	30,000	6,000	12,250	8,500	20	0	200
Callettsburg.....	0	^c 40,000 ^d 74,000 ^e 40,000 ^f 17,000	10,000	12,000	30,000	6,000	^h 12,000	8,500	20	0	200
Somerset.....	0	^d 1,300	0	0	0	0	^h 250	0	0	0	0
Louisiana.....	172,000	1,267,500	35,000	194,700	50,470	22,000	92,120	38,490	222	81,400	3,137
Lake Charles.....	0	^d 12,000	0	0	0	0	0	0	0	0	0
Beile Chasse (Alliance).....	0	^d 42,000 ^e 22,000 ^f 32,000	0	28,000	0	8,000	0	0	40	3,500	45
Lake Charles.....	0	0	0	0	0	0	0	0	0	0	0
Princeton.....	0	^c 4,400	0	0	910	0	0	3,490	0	0	0
Clutch Point.....	0	0	0	0	0	0	0	0	0	0	0
Lake Charles.....	45,000	^d 105,000 ^e 28,000 ^f 25,000	0	23,000	0	4,000	^h 22,400	10,000	0	22,500	405
Libon.....	0	0	0	0	0	0	^h 2,000	0	0	0	0
Westlake.....	0	^d 32,000 ^e 109,500 ^f 13,000	0	7,500	0	0	0	0	0	18,250	290
Jennings (Mermentau).....	0	0	0	0	0	0	0	0	0	0	0
Utah.....	0	^d 2,000	0	0	0	0	^e 100 ^h 120	0	1	0	0
Bayou Rouge.....	24,000	^d 95,000 ^e 55,000 ^f 21,500	0	33,200	12,000	0	^h 12,500	16,500	18	24,400	661
Krotz Springs.....	0	^d 13,000	0	0	0	0	^g 1,500	0	0	0	10
Cent Rose.....	0	0	0	0	0	0	0	0	0	0	0
Cotton Valley.....	0	0	0	0	0	0	0	0	0	0	0
Coryville.....	0	^c 71,000 ^d 50,000 ^e 40,000	30,000	27,000	25,000	0	^g 7,000 ^h 9,000	0	0	0	504

^a Delayed Coking
^b Low Pressure
^c Heavy Gas Oil
^d Naph./Ref. Feeds
^e Distillate
^f High Pressure
^g C₄
^h C₅ and C₆
ⁱ Other/Residual
^j Fluid Coking
^k Visbreaking
^l Other Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.
* Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Louisiana (Continued)									
Mobil Oil Corp.									
Chalmette	160,000	0	175,000	0	92,500	^a 33,000	58,000	0	^b 19,000 ^f 28,000
Murphy Oil U.S.A. Inc.									
Meraux	95,000	0	100,000	0	40,000	0	35,000	2,500	^b 23,000
Pennzoil Products Co.									
Shreveport	46,200	0	50,000	0	24,300	0	0	0	^f 5,000
Placid Refining Co.									
Port Allen	46,000	0	47,000	0	20,000	0	19,000	2,000	^b 10,000
Shell Oil Co.									
Norco	215,000	0	220,000	0	78,000	^a 21,000 ^f 106,700	0	0	^b 38,000 ^f 16,000
Star Enterprise									
Convent	225,000	0	240,000	0	75,000	^k 12,000	85,000	5,000	^f 40,000
Trans-America Refining Co.*									
Norco (Good Hope)	0	300,000	0	350,000	240,000	^k 140,000	110,000	0	^f 15,000
Maryland	0	0	0	0	0	0	0	0	0
Chevron U.S.A. Inc.									
Baltimore	0	0	0	0	0	0	0	0	0
Michigan	118,600	0	129,000	0	38,000	0	47,000	1,000	33,000
Crystal Refining Co.									
Carson City	3,000	0	6,000	0	0	0	0	0	0
Marathon Petroleum Co.									
Detroit	70,000	0	72,000	0	38,000	0	27,500	1,000	^b 12,500 ^f 6,500
Total Petroleum Inc.									
Alma	45,600	0	51,000	0	0	0	19,500	0	^b 14,000
Minnesota	267,100	0	279,220	0	182,000	60,000	83,000	1,000	59,500
Ashland Oil Inc.									
St. Paul	67,100	0	69,220	0	32,000	0	23,000	0	^f 23,500
Koch Refining Co.									
St. Paul (Pine Bend)	200,000	0	210,000	0	150,000	^a 60,000	60,000	1,000	^b 28,000 ^f 8,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Desasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Louisiana (Continued)											
Caldwell	18,000	^c 43,000 ^d 45,000 ^e 24,000	0	19,000	0	7,000	0	0	24	7,750	198
Harvey	0	^d 29,000 ^e 15,000	0	9,500	12,000	0	0	0	0	0	24
Stovall	0	^c 8,900 ^d 10,000 ⁱ 1,200	0	0	560	0	0	8,500	6	0	13
Port Allen	0	^d 10,000	5,000	4,000	0	0	0	0	0	0	8
Greene	35,000	^c 70,000 ^d 29,000 ⁱ 28,000	0	15,000	0	0	0	0	70	5,000	111
Corvett	50,000	^d 40,000 ^e 69,500 ⁱ 32,500	0	14,500	0	0	^h 12,500	0	63	0	728
Greene (Good Hope)	0	^d 15,000 ^e 25,000	0	14,000	0	3,000	^e 5,000 ^h 20,000	0	0	0	140
Bayland	0	0	0	0	11,300	0	0	0	0	0	0
Greene	0	0	0	0	11,300	0	0	0	0	0	0
Michigan	0	61,800	0	9,200	28,000	0	1,100	0	0	0	94
Greene City	0	0	0	0	0	0	0	0	0	0	0
Greene	0	^c 12,000 ^d 17,000 ^e 3,000	0	4,200	28,000	0	0	0	0	0	80
Greene	0	^c 3,800 ^d 22,000 ^e 2,000 ⁱ 2,000	0	5,000	0	0	^h 1,100	0	0	0	14
Greene	0	227,000	0	15,500	69,000	0	23,300	0	20	16,000	519
Paul	0	^c 23,000 ^d 32,800 ^e 7,200	0	5,500	14,000	0	^h 8,300	0	0	0	44
Paul (Pine Bend)	0	^c 72,000 ^d 41,000 ^e 51,000	0	10,000	55,000	0	^h 15,000	0	20	16,000	475

^f Delayed Coking
^g C₄
^h Low Pressure C₃ and C₆
ⁱ Heavy Gas Oil Other/Residual
^j Naph./Ref. Feeds Fluid Coking
^k Distillate Visbreaking
^l High Pressure Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.
* Reported no inputs during 1990.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Mississippi	362,400	6,000	383,000	7,900	274,775	83,500	80,000	7,000	96,000
Amerada Hess Corp. Purvis	30,000	0	32,000	0	0	¹ 8,500	16,000	7,000	¹ 6,000
Chevron U.S.A. Inc. Pascagoula	295,000	0	310,000	0	243,000	^a 75,000	64,000	0	^b 57,000 ^c 33,000
Ergon Inc. Vicksburg	20,600	0	22,000	0	17,000	0	0	0	
Petro Source Resources Inc. Vicksburg	0	6,000	0	7,900	7,900	0	0	0	
Southland Oil Co. Lumberton	5,800	0	6,500	0	0	0	0	0	
Sandersville	11,000	0	12,500	0	6,875	0	0	0	
Montana	139,650	0	145,500	0	53,450	7,700	55,900	6,250	37,700
Cenex Laurel	41,450	0	42,500	0	12,000	0	13,500	1,500	^b 12,000
Conoco Inc. Billings	49,500	0	52,000	0	20,000	0	19,000	1,000	¹ 14,700
Exxon Co. U.S.A. Billings	42,000	0	44,000	0	18,000	¹ 7,700	21,000	3,500	¹ 10,000
Montana Refining Co. Great Falls	6,700	0	7,000	0	3,450	0	2,400	250	¹ 1,000
Nevada	0	4,500	0	4,700	0	0	0	0	
Petro Source Refining Partners Tonopah	0	4,500	0	4,700	0	0	0	0	
New Jersey	334,500	124,400	352,000	132,400	258,900	21,000	256,000	37,000	77,500
Amerada Hess Corp. Port Reading (Sewaren)	0	0	0	0	0	0	50,000	0	
Chevron U.S.A. Inc. Perth Amboy	0	80,000	0	85,000	46,000	0	0	0	
Coastal Eagle Point Oil Co. Westville	104,500	0	110,000	0	48,000	0	50,000	12,000	^b 26,000
Exxon Co. U.S.A. Linden (Bayway)	130,000	0	135,000	0	66,000	0	120,000	25,000	^b 28,000
Mobil Oil Corp. Paulsboro	100,000	0	107,000	0	64,200	^a 21,000	36,000	0	¹ 23,500
Seaview Petroleum Inc. Paulsboro	0	44,400	0	47,400	34,700	0	0	0	

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Mississippi	68,000	254,000	0	20,700	41,700	5,500	0	5,000	217	21,600	1,260
Poncha	0	^d 6,000 ^e 6,000	0	4,500	0	0	0	0	0	1,600	40
Pascagoula	68,000	^c 63,000 ^d 48,000 ^e 30,000 ^f 96,000	0	16,200	20,300	5,500	0	0	215	20,000	1,220
Vicksburg	0	^g 5,000	0	0	12,000	0	0	5,000	2	0	0
Vicksburg	0	0	0	0	0	0	0	0	0	0	0
Lumberton	0	0	0	0	3,575	0	0	0	0	0	0
Sandersville	0	0	0	0	6,125	0	0	0	0	0	0
Montana	4,900	119,340	11,500	13,780	26,700	400	5,350	0	21	2,175	37
Summit	0	^d 18,000 ^e 15,000	4,000	3,780	8,000	0	^g 1,250	0	0	0	37
Elings	0	^h 4,500 ⁱ 38,000	7,500	6,000	6,500	0	^j 3,800	0	0	0	0
Elings	4,900	^d 15,500 ^e 20,000 ^f 6,000	0	3,400	11,000	0	0	0	21	2,175	0
Great Falls	0	^d 1,100 ^e 1,240	0	600	1,200	400	^h 300	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0
Tropic	0	0	0	0	0	0	0	0	0	0	0
New Jersey	17,000	289,000	0	29,500	94,850	3,500	34,300	8,500	17	5,500	3,592
Port Reading (Sewaren)	0	0	0	5,500	0	0	0	0	0	0	10
Port Amboy	0	0	0	0	35,000	0	0	0	0	0	0
Westville	17,000	^d 26,000 ^e 15,000	0	4,000	0	3,500	^h 9,300	0	0	0	3,000
London (Bayway)	0	^c 50,000 ^d 48,000 ^e 65,000	0	13,500	38,000	0	^h 25,000	0	6	0	433
Pulaski	0	^d 23,500 ^e 46,500 ^f 15,000	0	6,500	0	0	0	8,500	11	5,500	149
Pulaski	0	0	0	0	21,850	0	0	0	0	0	0

^a Delayed Coking
^b C₄

^c Low Pressure
^d C₅ and C₆

^e Heavy Gas Oil
^f Other/Residual

^g Naph./Ref. Feeds
^h Fluid Coking

ⁱ Distillate
^j Visbreaking

^k High Pressure
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

^m Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
New Mexico	74,800	4,000	79,107	6,100	13,900	0	33,800	4,500	21,050
Bloomfield Refining Co.									
Bloomfield	16,800	0	18,107	0	0	0	6,000	500	¹ 4,000
Giant Refining Co.									
Gallup	20,000	0	21,000	0	7,900	0	7,800	3,000	¹ 6,800
Navajo Refining Co.									
Artesia	38,000	0	40,000	0	6,000	0	20,000	1,000	¹ 8,000
Thriftway Co.									
Bloomfield	0	4,000	0	6,100	0	0	0	0	² 2,250
New York	41,850	0	45,000	0	28,000	0	0	0	0
Cibro Petroleum Products Inc.									
Albany	41,850	0	45,000	0	28,000	0	0	0	0
North Carolina	3,000	0	3,000	0	0	0	0	0	0
GNC Energy Corp.									
Greensboro	3,000	0	3,000	0	0	0	0	0	0
North Dakota	58,000	0	60,000	0	0	0	26,000	3,600	12,100
Amoco Oil Co.									
Mandan	58,000	0	60,000	0	0	0	26,000	3,600	¹ 12,100
Ohio	457,100	0	477,000	0	172,000	31,700	174,000	17,500	162,600
Ashland Oil Inc.									
Canton	66,000	0	68,000	0	33,000	0	25,000	0	² 20,000
BP Oil Corp.									
Lima	140,000	0	150,000	0	41,000	^a 18,000	34,000	0	¹ 55,000
Toledo	126,100	0	130,000	0	68,000	^a 13,700	55,000	16,500	¹ 42,000
Sun Co Inc.									
Toledo	125,000	0	129,000	0	30,000	0	60,000	1,000	¹ 45,600
Oklahoma	395,500	0	416,200	0	147,000	26,500	149,000	5,000	101,500
Barrett Refining Corp.									
Thomas (Custer)	10,500	0	11,200	0	0	0	0	0	0
Conoco Inc.									
Ponca City	140,000	0	145,000	0	45,000	^a 20,500	53,000	0	¹ 36,000
Kerr-McGee Refining Corp.									
Wynnewood	45,000	0	50,000	0	14,000	0	18,000	0	² 12,500
Sinclair Oil Corp.									
Tulsa	47,000	0	50,000	0	27,000	0	18,000	5,000	¹ 12,000
Sun Co Inc.									
Tulsa	85,000	0	90,000	0	29,000	^a 6,000	35,000	0	¹ 24,000
Total Petroleum Inc.									
Ardmore	68,000	0	70,000	0	32,000	0	25,000	0	² 17,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent C ^a asphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
New Mexico	1,000	29,800	0	5,000	4,100	0	4,000	0	1	0	0
Bloomfield	0	^d 4,000	0	0	0	0	0	0	0	0	0
Corpus	0	^d 6,800	0	1,600	700	0	^h 4,000	0	0	0	0
Artesia	0	^d 10,000 ^g 9,000	0	3,400	3,400	0	0	0	0	0	0
Bloomfield	1,000	0	0	0	0	0	0	0	1	0	0
New York	0	0	0	0	13,000	0	0	0	0	0	0
Albany	0	0	0	0	13,000	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0	0	0	0	0	0
Greensboro	0	0	0	0	0	0	0	0	0	0	0
North Dakota	0	19,100	0	4,300	0	0	5,100	0	0	0	17
Mandan	0	^d 19,100	0	4,300	0	0	^h 5,100	0	0	0	17
Ohio	87,200	196,500	9,000	25,800	21,800	16,000	10,693	200	72	6,190	240
Canton	0	^c 23,000 ^d 26,500 ^g 7,000	0	7,000	12,000	0	^h 6,500	0	0	0	55
Lima	24,000	^d 60,000	0	0	300	7,000	^g 4,193	0	0	3,000	40
Toledo	35,000	^d 40,000	0	11,000	7,000	0	0	0	24	3,190	100
Toledo	28,200	^d 40,000	9,000	7,800	2,500	9,000	0	200	48	0	45
Oklahoma	5,000	177,500	10,300	34,000	18,800	2,200	30,400	9,500	10	6,025	42
Thomas (Custer)	0	0	0	0	0	0	0	0	0	0	0
Perca City	0	^d 36,000 ^g 30,000	0	12,000	0	0	^g 4,500 ^h 10,000	2,000	0	4,800	0
Wynnewood	5,000	^d 10,500	4,500	5,000	5,000	0	^h 4,000	0	10	0	0
Tulsa	0	^d 12,000 ^g 5,000	0	3,000	3,200	0	^h 8,000	0	0	0	20
Tulsa	0	^d 24,000 ^h 10,000	5,800	7,000	4,600	2,200	^g 2,800	7,500	0	1,225	0
Andover	0	^c 26,000 ^d 24,000	0	7,000	6,000	0	^h 1,100	0	0	0	22

^a Delayed Coking ^b Low Pressure ^c Heavy Gas Oil ^d Naph./Ref. Feeds ^e Distillate ^f High Pressure
^g C₄ ^h C₅ and C₆ ⁱ Other/Residual ^j Fluid Coking ^k Visbreaking ^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

^g Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Oregon	0	0	0	0	16,000	0	0	0	0
Chevron U.S.A. Inc. Portland (Willbridge)	0	0	0	0	16,000	0	0	0	0
Pennsylvania	744,315	0	772,500	0	320,250	0	247,000	6,800	200,400
BP Oil Corp. Marcus Hook	172,000	0	180,000	0	75,000	0	50,000	1,600	^b 50,000
Chevron U.S.A. Inc. Philadelphia	175,000	0	180,000	0	80,000	0	62,000	5,000	^f 34,000
Pennzoil Products Co. Rouseville	15,700	0	16,500	0	6,500	0	0	0	^b 5,820
Petrowax Pennsylvania Inc. (Formerly Quaker State Oil Refining) Bradford (Farmer's Valley)	6,700	0	7,000	0	3,750	0	0	0	^b 1,280
Sun Co Inc. Marcus Hook	175,000	0	185,000	0	46,000	0	86,000	0	^f 41,300
Sun Refining & Marketing Philadelphia	130,000	0	132,000	0	83,000	0	29,000	0	^f 50,000
United Refining Co. Warren	60,000	0	62,000	0	26,000	0	20,000	200	^f 16,000
Witco Corp. Bradford	9,915	0	10,000	0	0	0	0	0	^f 2,000
Tennessee	60,000	0	62,000	0	12,000	0	30,000	0	10,000
Mapco Petroleum Inc. Memphis	60,000	0	62,000	0	12,000	0	30,000	0	^b 10,000
Texas	3,675,500	57,250	4,097,000	64,500	1,718,900	373,800	1,642,500	125,500	1,147,800
Amoco Oil Co. Texas City	433,000	0	460,000	0	195,000	^a 42,800	200,000	43,000	^b 60,000 ^f 100,000
Champlin Refining & Chemical Inc. Corpus Christi	130,000	0	138,000	0	80,000	^a 33,000	76,500	0	^b 54,000
Chevron U.S.A. Inc. El Paso	66,000	0	68,000	0	54,000	0	22,000	0	^b 25,000
Port Arthur	315,300	0	324,500	0	156,000	^a 34,000	110,000	6,000	^b 44,100 ^f 23,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Oregon	0	0	0	0	11,500	0	0	0	0	0	0
Portland (Willbridge)	0	0	0	0	11,500	0	0	0	0	0	0
Pennsylvania	51,000	471,820	0	51,000	33,000	12,300	11,950	19,250	56	0	420
Marcus Hook	21,000	^c 42,000 ^d 56,000 ^e 44,000	0	12,000	0	0	^g 4,000	0	0	0	201
Philadelphia	0	^d 34,000 ^e 30,000	0	18,000	0	5,300	0	0	0	0	45
Roseville	0	^d 6,500 ^h 8,000	0	0	0	0	^h 1,150	4,750	4	0	0
Sedford (Farmer's Valley)	0	^d 2,520	0	0	0	0	0	0	0	0	0
Marcus Hook	0	^d 57,500 ^e 28,800 ^f 6,000	0	12,000	0	7,000	0	11,500	7	0	0
Philadelphia	30,000	^c 24,000 ^d 54,000 ^e 50,000	0	6,000	25,000	0	0	0	45	0	154
Warren	0	^d 20,000 ^e 6,000	0	3,000	8,000	0	^h 6,800	0	0	0	20
Bradford	0	^d 2,500	0	0	0	0	0	3,000	0	0	0
Tennessee	0	30,000	0	2,500	3,500	0	4,000	0	0	0	45
Memphis	0	^d 14,000 ^e 16,000	0	2,500	3,500	0	^h 4,000	0	0	0	45
Texas	313,500	3,176,650	102,500	296,650	65,025	186,375	144,425	88,000	610	53,405	6,412
Texas City	120,000	^c 85,000 ^d 168,000 ^e 76,000	0	62,000	0	45,000	^h 28,000	0	180	14,900	1,400
Corpus Christi	0	^c 58,800 ^d 58,400 ^e 40,300	0	18,500	0	5,000	0	0	0	1,900	200
El Paso	0	^d 25,000 ^e 21,500	0	5,500	5,500	0	^g 3,000	0	0	0	47
Port Arthur	0	^c 64,000 ^d 67,100 ^e 105,000 ^f 13,900	0	16,900	0	16,800	^h 7,200	7,000	0	9,200	532

^a Delayed Coking
^b Low Pressure
^c Heavy Gas Oil
^d Naph./Ref. Feeds
^e Distillate
^f High Pressure
^g C₄
^h C₅ and C₆
ⁱ Other/Residual
^j Fluid Coking
^k Visbreaking
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.
* Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Texas (Continued)									
Coastal Refining & Marketing Inc.									
Corpus Christi	85,000	0	95,000	0	45,000	^k 10,000 ^a 12,000	17,500	0	ⁱ 27,500
Crown Central Petroleum Corp.									
Pasadena	100,000	0	103,000	0	38,000	^a 12,500	56,000	0	^b 23,000 ⁱ 13,000
Diamond Shamrock Refining & Marketing Co.									
Sunray (McKee)	110,000	0	115,000	0	47,000	0	45,000	0	^b 40,000
Three Rivers	51,000	0	55,000	0	20,000	0	20,000	0	^b 11,000
El Paso Refining Co. Ltd.									
El Paso	25,500	0	27,000	0	0	^a 4,000	10,500	1,000	ⁱ 6,000
Exxon Co. U.S.A.									
Baytown	426,000	0	448,000	0	219,000	ⁱ 28,000	180,000	15,000	^b 123,000
Fina Oil & Chemical Co.									
Big Spring	55,000	0	60,000	0	25,000	^k 3,500	23,000	0	^b 20,000
Port Arthur	110,000	0	115,000	0	50,000	0	36,000	0	^b 35,000
Hill Petroleum Co.									
Houston	70,900	0	75,000	0	39,000	0	61,000	0	ⁱ 13,500
Texas City	119,600	0	130,000	0	54,000	^k 19,000	43,500	0	^b 12,000 ⁱ 11,000
Howell Hydrocarbons Corp.									
San Antonio	1,500	3,000	2,000	3,000	0	0	0	0	ⁱ 1,200
Koch Refining Co.									
Corpus Christi	125,000	0	130,000	0	42,000	^a 12,000	50,000	800	^b 48,000
La Gloria Oil & Gas Co.									
Tyler	55,000	0	55,500	0	14,000	^a 6,500	18,000	800	^b 12,000 ⁱ 4,600
Leal Petroleum Corp.									
Nixon	15,900	5,000	17,100	7,500	0	0	0	0	0
Longview Refining Associates									
Longview	13,300	0	14,000	0	5,000	0	0	0	ⁱ 4,400
Lyondell Petrochemical Co.									
Houston	290,000	0	300,000	0	127,000	^a 45,000	85,000	0	^b 25,000 ⁱ 83,000
Marathon Petroleum Co.									
Texas City	69,500	0	74,000	0	27,000	0	37,000	0	ⁱ 10,500
Mobil Oil Corp.									
Beaumont	275,000	0	290,000	0	86,000	^a 29,500	102,000	0	^b 46,000 ⁱ 57,000
Petrolite Corp.									
Kilgore	1,000	0	1,400	0	400	0	0	0	0

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/yr)
Texas (Continued)											
Corpus Christi	11,000	^c 22,500 ^d 32,000 ^e 24,000	0	3,000	5,000	14,500	^h 5,200	0	24	3,250	85
Pasadena	0	^d 28,000 ^e 7,000 ⁱ 16,000	0	10,000	0	0	^h 5,000	0	0	1,500	20
Sunny (McKee)	20,000	^d 33,000	15,000	8,700	5,000	0	0	0	0	0	45
Three Rivers	0	^d 11,000	7,000	6,000	500	0	0	1,000	0	0	0
El Paso	0	^d 6,000	0	3,400	0	0	^g 700	0	0	400	20
Baytown	20,000	^c 110,000 ^d 162,500 ^e 188,000 ⁱ 44,100	35,000	29,000	7,000	0	0	31,200	85	500	1,008
Big Spring	0	^c 6,000 ^d 25,000 ^e 11,000	10,000	6,000	5,500	0	0	0	0	0	50
Port Arthur	18,500	^d 40,000 ^e 32,000 ⁱ 18,000	18,000	5,000	2,000	9,500	^h 8,000	0	0	0	170
Houston	0	^d 14,000 ^e 31,500	17,500	5,500	7,000	5,000	0	0	0	0	100
Waco City	0	^d 23,000 ^e 29,000	0	6,200	0	0	^h 4,800	0	0	0	35
San Antonio	0	0	0	0	0	1,200	0	0	0	0	0
Corpus Christi	12,000	^d 54,000 ^e 9,000	0	9,200	0	18,550	^h 200	0	0	2,000	50
Mercedes	0	^d 17,000 ^e 7,500	0	4,700	0	0	^g 500 ^h 4,000	0	0	1,500	11
Midland	0	^d 9,500 ^e 8,000 ⁱ 1,000	0	0	0	0	^g 1,000 ^h 1,000	0	0	0	0
Midview	0	^d 4,400	0	0	0	0	0	0	0	0	0
Houston	0	^c 82,000 ^d 132,000 ^e 93,000 ⁱ 6,600	0	0	0	36,000	0	6,600	0	10,900	400
Waco City	0	0	0	10,000	0	2,500	0	0	0	0	0
Daughton	32,000	^d 92,000 ^e 116,000 ⁱ 5,650	0	13,000	0	0	^h 20,000	11,000	60	7,355	110
Corpus Christi	0	0	0	0	125	0	0	0	0	0	0

^a Delayed Coking ^b Low Pressure ^c Heavy Gas Oil ^d Naph./Ref. Feeds ^e Distillate ^f High Pressure
^g C₄ ^h C₅ and C₆ ⁱ Other/Residual ^j Fluid Coking ^k Visbreaking ^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

* Reported no inputs during 1989.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Texas (Continued)									
Phillips 66 Co.									
Borger	105,000	0	110,000	0	0	0	60,000	10,400	^f 26,000
Sweeny	175,000	0	195,000	0	83,000	0	87,000	12,000	^f 38,000
Pride Refining Inc.									
Abilene	28,500	14,250	30,000	15,000	12,000	0	0	0	0
Rattlesnake Refining Corp.									
Wickett	0	8,000	0	10,000	0	0	0	0	^b 2,400
Shell Oil Co.									
Dear Park	215,900	0	227,000	0	87,500	^k 17,000 ^l 55,000	65,000	5,000	^b 43,000 ^f 20,000
Odessa	28,600	0	29,500	0	0	0	10,500	0	^f 10,000
South Hampton Refining Co.									
Silsbee	0	0	0	0	0	0	0	0	^b 1,400
Southwestern Refining Co. Inc.									
Corpus Christi	104,000	0	108,000	0	36,000	0	52,000	0	^f 30,000
Star Enterprise									
Port Arthur/Neches	250,000	0	273,000	0	138,000	0	110,000	31,500	^b 46,000
Trifinery									
Corpus Christi	0	27,000	0	29,000	15,000	^k 10,000	0	0	0
Valero Refining Co.									
Corpus Christi	25,000	0	27,000	0	24,000	0	65,000	0	0
Utah	154,500	0	160,000	0	46,980	8,500	54,800	10,600	30,500
Amoco Oil Co.									
Salt Lake City	40,000	0	41,500	0	0	0	18,000	4,000	^f 7,600
Big West Oil Co.									
North Salt Lake	24,000	0	25,000	0	3,800	0	4,400	2,500	^f 5,000
Chevron U.S.A. Inc.									
Salt Lake City	45,000	0	46,000	0	35,500	^a 8,500	18,000	1,000	^f 7,500
Crysen Refining Inc.									
Woods Cross	12,500	0	13,000	0	2,880	0	0	0	^b 2,400
Pennzoil Products Co.									
Roosevelt	8,000	0	8,500	0	0	0	6,000	500	^f 2,000
Phillips 66 Co.									
Woods Cross	25,000	0	26,000	0	4,800	0	8,400	2,600	^f 6,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Texas (Continued)											
Borger	0	^d 26,500 ^e 40,000 ⁱ 50,000	0	14,000	0	0	^g 11,000 ^h 24,600	0	50	0	381
Seaway	0	^d 53,000 ^e 50,000 ⁱ 75,000	0	15,450	0	5,575	^h 16,900	0	80	0	420
Islene	0	0	0	0	0	0	0	0	0	0	0
Kickapoo	0	^c 3,200 ^d 2,400 ^e 2,400	0	0	0	0	0	0	0	0	0
Over Park	65,000	^c 45,000 ^d 65,000 ^e 70,000 ⁱ 54,500	0	8,100	5,400	19,500	0	12,500	65	0	567
Coessa	0	^d 11,000	0	3,300	0	350	0	0	0	0	0
Siobee	0	^d 3,500 ^e 500 ⁱ 500	0	0	0	400	^h 825	0	2	0	0
Corpus Christi	0	^c 18,000 ^d 40,000 ^e 27,000	0	7,500	0	6,500	0	0	0	0	129
Port Arthur/Neches	15,000	^d 43,000 ^e 80,000 ⁱ 19,900	0	16,200	14,000	0	0	18,700	0	0	262
Corpus Christi	0	0	0	0	8,000	0	0	0	0	0	0
Corpus Christi	0	ⁱ 62,000	0	9,500	0	0	^h 2,500	0	64	0	370
John	2,400	41,200	5,000	11,400	3,200	0	6,900	0	0	1,750	13
Walt Lake City	0	^d 7,600	0	4,000	0	0	^g 3,000	0	0	0	0
North Salt Lake	0	^d 6,000	0	1,000	0	0	^g 200	0	0	0	0
Walt Lake City	0	^d 7,500 ^e 5,500	0	4,300	0	0	^g 1,100	0	0	1,750	13
Woods Cross	0	0	0	0	1,500	0	0	0	0	0	0
Wasevett	2,400	^d 2,000	0	0	0	0	0	0	0	0	0
Woods Cross	0	^d 11,000 ^e 1,600	5,000	2,100	1,700	0	^h 2,600	0	0	0	0

^a Delayed Coking ^b Low Pressure ^c Heavy Gas Oil ^d Naph./Ref. Feeds ^e Distillate ^f High Pressure
^g C₅ ^h C₅ and C₆ ⁱ Other/Residual ^j Fluid Coking ^k Visbreaking ^l Other/Gas Oil
^E = Estimated. MMcfd = Million cubic feet per day.
^{*} Reported no inputs during 1990.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming
	Operating	Idle	Operating	Idle			Fresh	Recycled	
Virginia	56,700	0	60,000	0	29,000	14,000	27,500	2,000	10,200
Amoco Oil Co. Yorktown	53,000	0	56,000	0	29,000	^a 14,000	27,500	2,000	^b 10,200
Primary Oil & Energy Corp. Chester	3,700	0	4,000	0	0	0	0	0	0
Washington	496,100	11,900	531,000	12,754	255,500	72,000	118,500	7,000	128,500
Arco Products Co. Ferndale	167,000	0	176,000	0	95,000	^a 50,000	0	0	^b 56,000
BP Oil Corp. Ferndale	77,400	0	95,000	0	35,000	0	28,500	0	^b 16,500
Chevron U.S.A. Inc. Richmond Beach	0	0	0	0	6,000	0	0	0	0
Shell Oil Co. Anacortes	89,300	0	92,500	0	44,000	0	42,000	3,000	^b 26,000
Sound Refining Inc. Tacoma	0	11,900	0	12,754	6,000	0	0	0	0
Texaco Refining & Marketing Inc. Anacortes (Puget Sound)	130,000	0	133,000	0	50,000	^a 22,000	48,000	4,000	^f 24,000
U.S. Oil & Refining Co. Tacoma	32,400	0	34,500	0	19,500	0	0	0	^f 6,000
West Virginia	12,500	0	12,500	0	6,000	0	0	0	3,700
Quaker State Oil Refining Corp. Newell	12,500	0	12,500	0	6,000	0	0	0	^b 3,700
Wisconsin	33,200	0	35,000	0	20,500	0	11,000	1,000	8,000
Murphy Oil U.S.A. Inc. Superior	33,200	0	35,000	0	20,500	0	11,000	1,000	^b 8,000
Wyoming	169,725	0	175,750	0	73,000	9,000	62,000	12,500	32,350
Amoco Oil Co. Casper	40,000	0	41,000	0	14,000	0	13,500	3,000	^f 7,100
Frontier Refining Co. Cheyenne	38,670	0	40,750	0	17,000	^a 9,000	12,000	500	^b 6,500
Little America Refining Co. Evansville (Casper)	24,500	0	25,500	0	12,000	0	10,500	5,000	^f 6,000
Sinclair Oil Corp. Sinclair	54,000	0	55,000	0	30,000	0	21,000	1,000	^f 10,000

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Virginia	0	26,500	0	0	0	0	0	0	0	5,100	73
Woktown	0	^d 10,500 ^e 16,000	0	0	0	0	0	0	0	5,100	73
Chattanooga	0	0	0	0	0	0	0	0	0	0	0
Washington	52,000	219,000	21,500	27,000	16,000	0	2,750	0	80	18,500	288
Fond du Lac	52,000	^d 38,000 ^e 18,000	0	0	0	0	0	0	80	12,500	180
Fond du Lac	0	^d 17,000 ^e 15,000	0	6,000	0	0	0	0	0	0	17
Richmond Beach	0	0	^a 0	0	5,000	0	0	0	0	0	0
Rocky Mountain	0	^c 7,500 ^d 32,000 ^e 20,500	17,000	11,000	0	0	^g 2,750	0	0	0	0
Tacoma	0	0	0	0	3,000	0	0	0	0	0	0
Tacoma (Puget Sound) ..	0	^d 26,000 ^e 13,000 ^f 22,000	4,500	10,000	0	0	0	0	0	6,000	84
Tacoma	0	^c 4,000 ^e 6,000	0	0	8,000	0	0	0	0	0	7
West Virginia	4,440	4,000	0	0	0	0	0	5,056	1	0	0
Well	4,440	^d 4,000	0	0	0	0	0	5,056	1	0	0
Wiscasset	0	14,800	0	1,600	13,500	0	2,000	0	0	0	14
Superior	0	^d 9,000 ^e 5,800	0	1,600	13,500	0	^h 2,000	0	0	0	14
Wyoming	0	52,500	0	9,850	16,950	0	3,500	0	0	1,450	42
Casper	0	^d 7,300	0	2,500	550	0	0	0	0	0	0
Dayton	0	^d 7,500 ^e 8,000	0	2,750	7,000	0	^g 1,500	0	0	450	24
Daytonville (Casper)	0	^e 3,700	0	0	4,400	0	0	0	0	0	0
Dayton	0	^d 14,000 ^e 12,000	0	3,500	5,000	0	^g 2,000	0	0	1,000	18

^a Delayed Coking
^b Low Pressure
^c Heavy Gas Oil
^d Naph./Ref. Feeds
^e Distillate
^f High Pressure
^g C₄
^h C₅ and C₆
ⁱ Other/Residual
^j Fluid Coking
^k Visbreaking
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

^a Reported no inputs during 1990.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity					
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming	
	Operating	Idle	Operating	Idle			Fresh	Recycled		
Wyoming (Continued)										
Wyoming Refining Co. Newcastle	12,555	0	13,500	0	0	0	5,000	3,000	^l 2,750	
U.S. Total	14,958,777	716,850	15,751,960	804,554	7,275,505	2,157,900	5,558,600	303,725	3,925,830	
Puerto Rico										
Puerto Rico	209,800	0	222,310	0	65,000	0	14,200	0	79,300	
Arochem International Inc.**										
Ponce	^E 80,000	^E 0	^E 84,210	^E 0	^E 0	^E 0	^E 0	^E 0	^E 0	
Caribbean Gulf Refining Corp. San Juan (Bayamon)	36,000	0	42,000	0	20,000	0	14,200	0	^b 6,500	
Peerless Oil & Chemical										
Ponce	8,800	0	9,100	0	0	0	0	0	0	
Phillips Puerto Rico Core Inc. Guayama	0	0	0	0	0	0	0	0	^b 38,400 ^f 14,400	
Sun Co Inc.										
Yabucoa	85,000	0	87,000	0	45,000	0	0	0	^b 20,000	
Virgin Islands	470,000	75,000	510,000	85,000	215,000	85,000	0	0	115,000	
Amerada Hess Corp.										
St. Croix	470,000	75,000	510,000	85,000	215,000	^k 85,000	0	0	^b 90,000 ^f 25,000	

Table 38. Capacity of Operable Petroleum Refineries by State as of January 1, 1991 (Continued)
(Barrels per Stream Day, Except Where Noted)

Location	Downstream Charge Capacity (Cont.)			Production Capacity							
	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	Sulfur (short tons/day)
Wyoming (Continued)											
Newcastle	0	0	0	900	0	0	0	0	0	0	0
U.S. Total	1,307,930	9,676,330	270,800	1,077,480	866,138	292,314	490,338	229,231	2,527	366,664	23,875
Puerto Rico	15,600	100,600	0	0	1,000	15,000	0	9,500	19	0	62
Ponce	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀	E ₀
San Juan (Bayamon)	0	^d 6,800 ^e 11,000	0	0	1,000	0	0	0	0	0	12
Ponce	0	0	0	0	0	0	0	0	0	0	0
Guayama	0	^d 52,800	0	0	0	15,000	0	0	0	0	0
Mayaguez	15,600	^c 10,000 ^d 20,000	0	0	0	0	0	9,500	19	0	50
Virgin Islands	0	420,000	0	0	0	20,000 ^e	18,000	0	0	0	580
St. Croix	0	^c 130,000 ^d 125,000 ^e 165,000	0	0	0	20,000	^h 18,000	0	0	0	580

^a Delayed Coking
^e C₄

^b Low Pressure
^h C₅ and C₆

^c Heavy Gas Oil
ⁱ Other/Residual

^d Naph./Ref. Feeds
^j Fluid Coking

^e Distillate
^k Visbreaking

^f High Pressure
^l Other/Gas Oil

E = Estimated. MMcfd = Million cubic feet per day.

* Reported no inputs during 1990.

** This company was a nonrespondent for the Form EIA-820, "Annual Refinery Report." Crude oil distillation capacity is from the January 1991, Form EIA-810, "Monthly Refinery Report." Sufficient data were unavailable to estimate downstream capacity.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 39. Refiners' Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 1991

Refiner	Barrels per Calendar Day	Refiner	Barrels per Calendar Day
Companies with Capacity Over 100,000 bbl/cd			
Chevron U.S.A. Inc.	1,575,100	Robinson, Illinois	160,000
Port Arthur, Texas	315,300	Detroit, Michigan	70,000
Pascagoula, Mississippi	295,000	Texas City, Texas	69,500
Richmond, California	270,000	Rock Island Refining Corp.	
El Segundo, California	254,000	Indianapolis, Indiana	50,000
Philadelphia, Pennsylvania	175,000		
Perth Amboy, New Jersey	80,000	Sun Co Inc.	515,000
El Paso, Texas	66,000	Marcus Hook, Pennsylvania	175,000
Honolulu, Hawaii	52,800	Toledo, Ohio	125,000
Salt Lake City, Utah	45,000	Tulsa, Oklahoma	85,000
Kenai, Alaska	22,000	Sun Refining & Marketing	
		Philadelphia, Pennsylvania	130,000
Exxon Co. U.S.A.	1,147,000		
Baytown, Texas	426,000	Atlantic Richfield Co.	415,740
Baton Rouge, Louisiana	421,000	Arco Products Co.	
Linden (Bayway), New Jersey	130,000	Los Angeles, California	223,000
Benicia, California	128,000	Ferndale, Washington	167,000
Billings, Montana	42,000	Arco Alaska Inc.	
		Prudhoe Bay, Alaska	13,740
Shell Oil Co.	1,082,900	Anchorage, Alaska	12,000
Wood River, Illinois	274,000		
Deer Park, Texas	215,900	E I Du Pont De Nemours & Co.	406,500
Norco, Louisiana	215,000	Conoco Inc.	
Martinez, California	140,100	Westlake, Louisiana	159,500
Carson (Wilmington), California	120,000	Ponca City, Oklahoma	140,000
Anacortes, Washington	89,300	Billings, Montana	49,500
Odessa, Texas	28,600	Commerce City, Colorado	48,000
		Santa Maria, California	9,500
Amoco Oil Co.	1,002,000		
Texas City, Texas	433,000	Ashland Oil Inc.	346,500
Whiting, Indiana	350,000	Catlettsburg, Kentucky	213,400
Mandan, North Dakota	58,000	St. Paul, Minnesota	67,100
Yorktown, Virginia	53,000	Canton, Ohio	66,000
Salt Lake City, Utah	40,000		
Casper, Wyoming	40,000	Koch Industries Inc.	325,000
Savannah, Georgia	28,000	Koch Refining Co.	
		St. Paul (Pine Bend), Minnesota	200,000
Mobil Oil Corp.	838,000	Corpus Christi, Texas	125,000
Beaumont, Texas	275,000		
Joliet, Illinois	180,000	Texaco Refining & Marketing Inc.	320,000
Chalmette, Louisiana	160,000	Anacortes (Puget Sound), Washington	130,000
Torrance, California	123,000	El Dorado, Kansas	78,000
Paulsboro, New Jersey	100,000	Wilmington (Los Angeles), California	64,000
		Bakersfield, California	48,000
BP America Inc.	733,500		
BP Oil Corp.		Citgo Petroleum Corp./Petroleos De Venezuela	
Belle Chasse (Alliance), Louisiana	218,000	Citgo Petroleum Corp.	
Marcus Hook, Pennsylvania	172,000	Lake Charles, Louisiana	305,000
Lima, Ohio	140,000		
Toledo, Ohio	126,100	Phillips 66 Co.	305,000
Ferndale, Washington	77,400	Sweeny, Texas	175,000
		Borger, Texas	105,000
Star Enterprise	615,000	Woods Cross, Utah	25,000
Port Arthur/Neches, Texas	250,000		
Convent, Louisiana	225,000	Trans-America Natural Gas Corp.	
Delaware City, Delaware	140,000	Trans-America Refining Co.	
		Norco (Good Hope), Louisiana	300,000
U.S. Steel Corp.	604,500		
Marathon Petroleum Co.		Lyondell Petrochemical Co.	
Garyville, Louisiana	255,000	Houston, Texas	290,000

See footnotes at end of table.

Table 39. Refiners' Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 1991
(Continued)

Refiner	Barrels per Calendar Day	Refiner	Barrels per Calendar Day
Solomon Inc.	282,000	Murphy Oil U.S.A. Inc.	128,200
Hill Petroleum Co.		Meraux, Louisiana	95,000
Texas City, Texas	119,600	Superior, Wisconsin	33,200
Houston, Texas	70,900		
Krotz Springs, Louisiana	57,500	Sinclair Oil Corp.	125,500
Saint Rose, Louisiana	34,000	Sinclair, Wyoming	54,000
		Tulsa, Oklahoma	47,000
Coastal Corp., The	275,300	Little America Refining Co.	
Coastal Eagle Point Oil Co.		Evansville (Casper), Wyoming	24,500
Westville, New Jersey	104,500		
Coastal Refining & Marketing Inc.		Horsham Corp.	121,600
Corpus Christi, Texas	85,000	Clark Oil & Refining Corp	
Coastal Derby Refining Co.		Blue Island, Illinois	64,600
El Dorado, Kansas	30,400	Hartford, Illinois	57,000
Wichita, Kansas	28,800		
Coastal Mobile Refining Co.		Total	13,702,440
Chickasaw, Alabama	26,600		
		Companies with Capacity	
Unocal Corp.	226,000	30,001 to 100,000 bbl/cd	
Wilmington (Los Angeles), California	108,000	Pacific Resources Inc.	
Rodeo (San Francisco), California	77,000	Hawaiian Independent Refinery Inc.	
Arroyo Grande (Santa Maria), California	41,000	Ewa Beach, Hawaii	93,500
Total Petroleum Inc.	197,600		
Ardmore, Oklahoma	68,000	Farmland Industries Inc.	82,900
Arkansas City, Kansas	56,000	Coffeyville, Kansas	56,500
Alma, Michigan	45,600	Phillipsburg, Kansas	26,400
Colorado Refining Co.			
Commerce City, Colorado	28,000	LL&E Petroleum Marketing	
Mapco Petroleum Inc.	172,800	Saraland (Mobile), Alabama	80,000
North Pole, Alaska	112,800		
Memphis, Tennessee	60,000	National Cooperative Refinery Association	
		McPherson, Kansas	75,600
Fina Oil & Chemical Co.	165,000		
Port Arthur, Texas	110,000	Tesoro Petroleum Corp.	
Big Spring, Texas	55,000	Kenai, Alaska	72,000
Diamond Shamrock Refining & Marketing Co.	161,000	Pennzoil Products Co.	69,900
Sunray (McKee), Texas	110,000	Shreveport, Louisiana	46,200
Three Rivers, Texas	51,000	Rouseville, Pennsylvania	15,700
		Roosevelt, Utah	8,000
Kerr-McGee Corp.	156,800		
Southwestern Refining Co. Inc.		American Ultramar Ltd	
Corpus Christi, Texas	104,000	Ultramar Refining	
Kerr-McGee Refining Corp.		Wilmington, California	66,000
Wynnewood, Oklahoma	45,000		
Cotton Valley, Louisiana	7,800	United Refining Co.	
		Warren, Pennsylvania	60,000
Crown Central Petroleum Corp.	155,000		
Pasadena, Texas	100,000	Castle Energy Corp.*	
La Gloria Oil & Gas Co.		Indian Refining	
Tyler, Texas	55,000	Lawrenceville, Illinois	55,000
Uno-Ven Co.		The Coastal Corp/Sinochem	
Lemont (Chicago), Illinois	147,000	Pacific Refining Co.	
		Hercules, California	55,000
Tosco Corp.			
Martinez (Avon), California	131,900	Lion Oil Co.	
		El Dorado, Arkansas	48,000
Petroleos de Venezuela			
Champlin Refining & Chemical Inc.		Thrifty Oil Co.	
Corpus Christi, Texas	130,000	Golden West Refining Co.	
		Santa Fe Springs, California	47,000

See footnotes at end of table.

Table 39. Refiners' Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 1991
(Continued)

Refiner	Barrels per Calendar Day	Refiner	Barrels per Calendar Day
Paramount Acquisition Corp. Paramount Petroleum Corp. Paramount, California	46,500	El Paso Refining Co. Ltd. El Paso, Texas	25,500
Placid Refining Co. Port Allen, Louisiana	46,000	Valero Refining Co. Corpus Christi, Texas	25,000
Powerine Oil Co. ^a Santa Fe Springs, California	45,000	Crysen Corp.	24,400
Holly Corp.	44,700	Crysen Refining Inc. Woods Cross, Utah	12,500
Navajo Refining Co. Artesia, New Mexico	38,000	Sound Refining Inc. Tacoma, Washington	11,900
Montana Refining Co. Great Falls, Montana	6,700	San Joaquin Refining Co. Inc. Bakersfield, California	24,300
Seaview Petroleum Inc. Paulsboro, New Jersey	44,400	Huntway Refining Co.	24,100
Pride Refining Inc. Abilene, Texas	42,750	Benicia, California	8,600
Cirillo Brothers Oil Co. Cibro Petroleum Products Inc. Albany, New York	41,850	Wilmington, California	5,500
Edgington Oil Co. Long Beach, California	41,600	Sunbelt Refining Co. Coolidge, Arizona	10,000
Cenex Laurel, Montana	41,450	Flying J Petroleum Inc. Big West Oil Co. North Salt Lake, Utah	24,000
Frontier Refining Co. Cheyenne, Wyoming	38,670	Kern Oil & Refining Co. Bakersfield, California	21,400
Hunt Consolidated Inc. Hunt Refining Co. Tuscaloosa, Alabama	33,500	Indiana Farm Bureau Cooperative Association Mount Vernon, Indiana	21,200
Time Oil Co. U.S. Oil & Refining Co. Tacoma, Washington	32,400	Leal Petroleum Corp. Nixon, Texas	20,900
Total	1,303,720	Ergon Inc. Vicksburg, Mississippi	20,600
Companies with Capacity 10,001 to 30,000 bbl/cd		Giant Industries of Arizona Inc. Giant Refining Co. Gallup, New Mexico	20,000
Amerada Hess Corp. Purvis, Mississippi	30,000	Gary Williams Co. Bloomfield Refining Co. Bloomfield, New Mexico	16,800
Pauley Petroleum Inc. Fletcher Oil & Refining Co. Carson, California	28,350	VGS Corp.	16,800
American International Refinery Inc. Lake Charles, Louisiana	27,000	Southland Oil Co. Sandersville, Mississippi	11,000
Petroserve Ltd. Trifinery Corpus Christi, Texas	27,000	Lumberton, Mississippi	5,800
		Landmark Petroleum Inc. ^b Fruita, Colorado	15,200
		Chemoil Refining Corp. Long Beach, California	14,200
		CAS Refining Co. ^c Jennings (Mermentau), Louisiana	13,500
		Transworld Oil U.S.A. Inc. ^c Calcasieu Refining Co. Lake Charles, Louisiana	13,500

See footnotes at end of table.

Table 39. Refiners' Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 1991
(Continued)

Refiner	Barrels per Calendar Day	Refiner	Barrels per Calendar Day
Longview Refining Associates Longview, Texas	13,300	Claiborne Gasoline Co. Lisbon, Louisiana	7,500
Wyoming Refining Co. Newcastle, Wyoming	12,555	Petro Star Inc. North Pole, Alaska	7,000
Quaker State Oil Refining Corp. Newell, West Virginia	12,500	Cross Oil & Refining Co. Inc. Smackover, Arkansas	6,700
World Oil Co. Sunland Refining Corp. Bakersfield, California	12,000	U.S. Petroleum Corp. Petrowax Pennsylvania Inc. ^d Bradford (Farmer's Valley), Pennsylvania	6,700
Grant Trading Co. Eco Asphalt Inc. Long Beach, California	10,550	Young Refining Corp. Douglasville, Georgia	5,540
Barrett Refining Corp. Thomas (Custer), Oklahoma	10,500	Somerset Refinery Inc. Somerset, Kentucky	5,500
Bechtel Investment Inc.	10,500	Martin Gas Sales Inc. Berry Petroleum Co. Stephens, Arkansas	5,000
Petro Source Resources Inc. Vicksburg, Mississippi	6,000	Howell Hydrocarbons Corp. San Antonio, Texas	4,500
Petro Source Refining Partners Tonopah, Nevada	4,500	Calumet Lubricants Co. L.P. * Princeton, Louisiana	4,207
Total	535,655	Oil Holdings Inc. Tenby Inc. Oxnard, California	4,000
Companies with Capacity 10,000 bbl/cd or Less		Thriftway Co. Bloomfield, New Mexico	4,000
Gasco Inc. Anchor Refining Co. Inc.* McKittrick, California	10,000	Primary Oil & Energy Corp. Chester, Virginia	3,700
Witco Corp. Bradford, Pennsylvania	9,915	Crystal Refining Co. Carson City, Michigan	3,000
Asphalt Materials Laketon Refining Corp. Laketon, Indiana	8,700	GNC Energy Corp. ^f Greensboro, North Carolina	3,000
Endevco Inc. Dubach Gas Co. Dubach, Louisiana	8,500	Inter-Coastal Energy Services Corp Troy, Indiana	1,250
Lunday Thagard Co. South Gate, California	8,100	Petrolite Corp. Kilgore, Texas	1,000
Anchor Gasoline Corp. Canal Refining Co. Church Point, Louisiana	8,000	Total	133,812
Three B Oil Co. Rattlesnake Refining Corp. Wickett, Texas	8,000	U.S. Total	15,675,627

- ^a Formerly Sargent Holdings Ltd.
^b Formerly Western Slope Refining Co.
^c Formerly Calcasieu Refining Co.
^d Formerly Quaker State Oil Refining
^e Formerly Calumet Refining Co.
^f Formerly B-T Energy Corp.

* bbl/cd = Barrels per Calendar Day.
 * Refinery was reactivated during 1990.
 Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 40. Operable Crude and Downstream Charge Capacity of Petroleum Refineries, January 1, 1981 - January 1, 1992

(Thousand Barrels per Stream Day, Except Where Noted)

Year/PAD District	Atmospheric Crude Oil Distillation	Downstream Charge Capacity							
		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Reforming	Catalytic Hydro-cracking	Catalytic Hydro-treating	Fuels Solvent Deasphalting
				Fresh	Recycled				
JAN 1, 1981	19,763	7,033	1,587	5,543	594	4,098	909	8,487	NA
JAN 1, 1982	19,018	7,197	1,782	5,474	562	3,966	892	8,539	NA
JAN 1, 1983	17,871	7,180	1,715	5,402	488	3,918	883	8,354	NA
JAN 1, 1984	17,059	7,165	1,852	5,310	492	3,907	952	9,009	NA
JAN 1, 1985	16,504	6,998	1,858	5,232	507	3,750	1,053	8,897	NA
JAN 1, 1986	16,346	6,892	1,880	5,214	463	3,744	1,125	8,791	NA
JAN 1, 1987	16,460	6,935	1,928	5,251	466	3,805	1,189	9,083	230
JAN 1, 1988	16,825	7,198	2,080	5,424	381	3,891	1,202	9,170	240
JAN 1, 1989	16,568	7,225	2,073	5,324	326	3,911	1,238	9,440	245
JAN 1, 1990	16,507	7,245	2,108	5,441	314	3,896	1,282	9,537	279
JAN 1, 1991	16,557	7,276	2,158	5,559	304	3,926	1,308	9,676	271
PADD I	1,565	737	80	598	51	346	90	917	0
PADD II	3,499	1,408	383	1,295	52	929	163	1,995	40
PADD III	7,629	3,208	1,050	2,671	149	1,832	555	4,817	143
PADD IV	582	216	29	200	30	123	12	249	17
PADD V	3,281	1,706	616	795	21	696	488	1,698	72
JAN 1, 1992	16,647	7,311	2,156	5,604	304	3,976	1,333	9,737	271
PADD I	1,568	737	80	609	51	346	90	917	0
PADD II	3,529	1,408	384	1,303	52	933	163	2,010	40
PADD III	7,685	3,241	1,047	2,697	149	1,878	580	4,863	143
PADD IV	582	216	29	200	30	123	12	249	17
PADD V	3,283	1,709	616	795	21	696	488	1,698	72
1991-1992 (Net Change)	90	36	-2	45	0	50	25	61	0
PADD I	3	0	0	11	0	0	0	0	0
PADD II	30	0	2	8	0	4	0	15	0
PADD III	56	33	-4	26	0	46	25	46	0
PADD IV	0	0	0	0	0	0	0	0	0
PADD V	2	3	0	0	0	0	0	0	0

NA = Not available.

(s) = Less than 500 barrels per stream day.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 41. Operable Production Capacity of Petroleum Refineries, January 1, 1981 - January 1, 1992
(Thousand Barrels per Stream Day, Except Where Noted)

Year/PAD District	Production Capacity							Sulfur (short tons/day)
	Alkylates	Asphalt	Aromatics	Isomers	Lubricants	Hydrogen (MMcfd)	Marketable Petroleum Coke	
JAN 1, 1981	974	765	299	131	234	2,054	276	NA
JAN 1, 1982	984	740	290	162	242	1,944	267	NA
JAN 1, 1983	960	722	237	212	241	2,298	296	NA
JAN 1, 1984	945	800	218	208	241	2,444	407	NA
JAN 1, 1985	917	767	215	219	243	2,572	424	NA
JAN 1, 1986	941	804	276	258	246	2,357	356	NA
JAN 1, 1987	974	788	287	326	250	2,569	364	23,806
JAN 1, 1988	993	788	289	465	232	2,418	368	27 639
JAN 1, 1989	1,015	823	290	469	230	2,501	333	28,369
JAN 1, 1990	1,030	844	290	456	232	2,607	341	24,202
JAN 1, 1991	1,077	866	292	490	229	2,527	367	23,875
PADD I	92	178	19	46	33	114	20	4,435
PADD II	274	291	56	161	32	174	73	3,246
PADD III	522	189	214	246	135	1,057	158	10,970
PADD IV	36	52	(s)	16	0	27	6	123
PADD V	154	156	3	21	30	1,155	110	5,101
JAN 1, 1992	1,092	863	293	498	229	2,572	367	24,181
PADD I	92	178	19	46	33	118	20	4,501
PADD II	274	291	57	165	32	174	73	3,446
PADD III	536	189	214	250	135	1,098	159	10,990
PADD IV	36	52	(s)	16	0	27	6	123
PADD V	154	154	3	21	30	1,155	110	5,121
1991-1992 (Net Change)	15	-3	1	7	0	45	0	306
PADD I	0	0	0	0	0	4	0	66
PADD II	0	0	1	4	0	0	0	200
PADD III	15	0	0	3	0	41	(s)	20
PADD IV	0	0	0	0	0	0	0	0
PADD V	0	-3	0	0	0	0	0	20

NA = Not available. MMcfd = Million cubic feet per day.

(s) = Less than 500 barrels per stream day.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 42. Working Storage Capacity^a at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991
(Thousand Barrels)

PAD District and State	Crude Oil	Products						
		Motor Gasoline			Gasoline Blending Components	Middle Distillates	Residual Fuel Oil	Asphalt and Road Oil
		Finished Leaded	Finished Unleaded	Total				
PAD District I	22,486	417	16,600	17,017	9,843	23,022	10,199	5,129
New Jersey	7,898	57	7,980	8,037	4,744	12,500	4,240	1,776
Pennsylvania	9,463	324	3,619	3,943	3,096	3,805	2,076	1,493
Other States ^c	5,125	36	5,001	5,037	2,003	6,717	3,883	1,860
PAD District II	24,774	3,883	22,192	26,075	16,560	23,299	5,651	11,174
Illinois	7,077	283	6,058	6,341	4,590	5,553	1,636	1,812
Indiana	2,426	224	4,000	4,224	2,586	3,666	1,410	1,332
Kansas	2,506	1,618	2,911	4,529	1,464	3,236	364	1,086
Ohio	3,346	310	1,898	2,208	2,438	1,660	324	769
Oklahoma	3,186	1,126	2,687	3,813	2,355	3,117	268	1,478
Other States ^c	6,233	322	4,638	4,960	3,127	6,067	1,649	4,697
PAD District III	80,683	1,279	34,913	36,192	31,601	39,358	17,886	8,674
Alabama	1,911	91	580	671	288	804	406	543
Arkansas	1,747	0	379	379	98	467	74	577
Louisiana	23,647	146	7,326	7,472	9,109	13,161	6,200	1,404
Mississippi	5,246	0	2,402	2,402	1,968	3,305	795	913
New Mexico	877	117	302	419	525	477	82	418
Texas	47,255	925	23,924	24,849	19,613	21,144	10,329	3,019
PAD District IV	4,151	1,557	2,657	4,214	4,681	3,965	1,588	4,238
Colorado	688	273	472	745	542	508	457	463
Montana	1,283	431	697	1,128	1,636	930	156	1,767
Utah	1,263	308	649	957	1,128	930	188	498
Wyoming	917	545	839	1,384	1,375	1,597	787	1,510
PAD District V	39,272	3,336	11,108	14,444	15,342	10,815	13,209	4,188
Alaska	1,065	108	326	434	334	767	1,119	86
California	27,027	2,273	8,876	11,149	12,003	7,367	9,168	3,041
Washington	7,748	947	1,494	2,441	2,350	2,166	1,388	339
Other States ^c	3,432	8	412	420	655	515	1,534	722
U.S. Total	171,366	10,472	87,470	97,942	78,027	100,459	48,533	31,603

See footnotes at end of table.

Table 42. Working Storage Capacity^a at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991 (Continued)
(Thousand Barrels)

PAD District and State	Products							Total Crude Oil and Products
	Lubricants	Propane	Butane	Jet Fuel		All Other Products ^b	Total Products	
				Naphtha- type	Kerosene- type			
PAD District I	3,637	2,047	1,477	705	4,218	15,895	93,189	115,675
New Jersey	1,407	269	403	0	2,706	5,644	41,726	49,624
Pennsylvania	1,873	1,032	963	206	1,166	6,922	26,575	36,038
Other States ^c	357	745	111	499	346	3,329	24,888	30,013
PAD District II	2,510	5,821	3,713	1,241	7,586	36,419	140,049	164,823
Illinois	944	797	811	44	1,740	11,708	35,976	43,053
Indiana	570	345	757	437	2,780	4,607	22,714	25,140
Kansas	0	2,669	431	0	499	4,226	18,504	21,010
Ohio	5	487	478	97	554	4,548	13,568	16,914
Oklahoma	782	264	300	524	1,085	6,009	19,995	23,181
Other States ^c	209	1,259	936	139	928	5,321	29,292	35,525
PAD District III	9,564	6,660	13,472	3,211	15,394	116,216	296,428	377,111
Alabama	0	3	14	214	546	560	4,049	5,960
Arkansas	55	2	6	26	25	546	2,255	4,002
Louisiana	2,687	1,262	6,183	939	3,872	23,906	76,195	99,842
Mississippi	382	69	117	130	1,304	4,935	16,320	21,566
New Mexico	0	14	21	477	257	756	3,446	4,323
Texas	6,440	5,310	7,131	1,425	9,390	85,513	194,163	241,418
PAD District IV	0	176	413	583	878	3,986	24,722	28,873
Colorado	0	15	15	168	201	645	3,759	4,447
Montana	0	17	230	102	351	1,168	7,485	8,768
Utah	0	131	50	173	187	1,241	5,483	6,746
Wyoming	0	13	118	140	139	932	7,995	8,912
PAD District V	1,950	179	1,890	1,197	6,712	44,713	114,639	153,911
Alaska	0	5	19	188	488	215	3,655	4,720
California	1,950	124	1,514	728	4,242	39,363	90,649	117,676
Washington	0	31	281	0	1,484	4,343	14,823	22,571
Other States ^c	0	19	76	281	498	792	5,512	8,944
U.S. Total	17,661	14,883	20,965	6,937	34,788	217,229	669,027	^d 840,393

^a The difference in volume between the maximum safe fill capacity and tank bottoms.

^b Includes ethane, isobutane, pentanes plus, other hydrocarbons, hydrogen, alcohol, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke, gas, petrochemical feedstocks and miscellaneous products.

^c Includes PAD District I: Connecticut, Delaware, Florida, Georgia, Maryland, Massachusetts, New York, North Carolina, Virginia, West Virginia.

PAD District II: Kentucky, Michigan, Minnesota, Missouri, North Dakota, Tennessee, Wisconsin.

PAD District V: Arizona, Hawaii, Nevada, Oregon.

^d Includes 19,071 thousand barrels of storage capacity at shutdown refineries and shutdown gasoline blending plants, and 40,966 thousand barrels storage capacity at operating gasoline blending plants.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 43. Shell Storage Capacity* at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991
(Thousand Barrels)

PAD District and State	Crude Oil	Products						
		Motor Gasoline			Gasoline Blending Components	Middle Distillates	Residual Fuel Oil	Asphalt and Road Oil
		Finished Leaded	Finished Unleaded	Total				
PAD District I	25,803	481	19,341	19,822	11,353	27,278	11,777	5,642
New Jersey	9,115	61	9,422	9,483	5,578	13,834	5,140	1,986
Pennsylvania	10,840	379	4,143	4,522	3,541	4,272	2,309	1,691
Other States ^c	5,848	41	5,776	5,817	2,234	9,172	4,328	1,965
PAD District II	28,019	4,270	25,386	29,656	18,672	25,111	6,187	12,151
Illinois	7,978	290	6,886	7,176	5,088	5,964	1,766	1,919
Indiana	2,892	253	4,990	5,243	3,105	4,073	1,537	1,517
Kansas	2,725	1,701	3,196	4,897	1,639	3,431	398	1,141
Ohio	3,757	385	2,252	2,637	2,923	1,836	421	829
Oklahoma	3,722	1,289	2,991	4,280	2,498	3,411	298	1,646
Other States ^c	6,945	352	5,071	5,423	3,419	6,396	1,767	5,099
PAD District III	96,926	1,473	40,031	41,504	36,733	44,382	20,257	7,737
Alabama	2,279	91	680	771	305	930	520	665
Arkansas	2,022	0	420	420	109	518	82	632
Louisiana	29,659	171	8,732	8,903	11,406	15,502	7,217	1,649
Mississippi	5,921	0	2,600	2,600	2,071	3,578	846	1,068
New Mexico	990	126	343	469	575	531	89	429
Texas	56,055	1,085	27,256	28,341	22,267	23,323	11,503	3,294
PAD District IV	4,682	1,742	2,982	4,724	5,181	4,219	1,681	4,488
Colorado	718	296	513	809	592	535	480	478
Montana	1,519	511	795	1,306	1,851	1,005	172	1,933
Utah	1,472	343	763	1,106	1,256	997	204	508
Wyoming	973	592	911	1,503	1,482	1,682	825	1,547
PAD District V	45,805	3,869	12,741	16,610	17,358	11,993	14,685	4,571
Alaska	1,132	115	345	460	355	802	1,168	89
California	32,125	2,713	10,295	13,008	13,689	8,281	10,403	3,373
Washington	8,620	1,032	1,664	2,696	2,613	2,357	1,499	351
Other States ^c	3,928	9	437	446	701	553	1,615	758
U.S. Total	201,235	11,835	100,481	112,316	89,297	112,983	54,587	34,567

See footnotes at end of table.

Table 43. Shell Storage Capacity^a at Refineries and Gasoline Blending Plants by PAD District and State as of January 1, 1991 (Continued)
(Thousand Barrels)

PAD District and State	Products							Total Crude Oil and Products
	Lubricants	Propane	Butane	Jet Fuel		All Other Products ^b	Total Products	
				Naphtha- type	Kerosene- type			
PAD District I	3,758	2,296	1,666	760	4,738	17,923	107,013	132,816
New Jersey	1,484	313	495	0	3,040	6,578	47,931	57,046
Pennsylvania	1,903	1,185	1,049	236	1,260	7,735	29,703	40,543
Other States ^c	371	798	122	524	438	3,610	29,379	35,227
PAD District II	2,709	6,104	4,056	1,414	8,238	40,721	155,019	183,038
Illinois	980	847	849	50	1,883	13,423	39,945	47,923
Indiana	630	345	780	509	3,004	5,197	25,940	28,832
Kansas	0	2,673	549	0	539	4,646	19,913	22,638
Ohio	10	500	515	120	607	5,042	15,440	19,197
Oklahoma	869	299	327	584	1,213	6,726	22,151	25,873
Other States ^c	220	1,440	1,036	151	992	5,687	31,630	38,575
PAD District III	10,712	7,902	15,004	3,663	17,346	133,629	338,869	435,795
Alabama	0	4	17	240	638	690	4,780	7,059
Arkansas	59	2	7	27	30	607	2,493	4,515
Louisiana	3,126	1,288	6,555	1,053	4,457	28,552	89,708	119,367
Mississippi	449	72	119	131	1,405	5,360	17,699	23,620
New Mexico	0	16	23	537	286	958	3,913	4,903
Texas	7,078	6,520	8,283	1,675	10,530	97,462	220,276	276,331
PAD District IV	0	191	440	650	942	4,386	26,880	31,562
Colorado	0	15	15	182	215	689	4,010	4,728
Montana	0	19	247	116	375	1,331	8,355	9,874
Utah	0	143	59	203	205	1,364	6,045	7,517
Wyoming	0	14	119	149	147	1,002	8,470	9,443
PAD District V	2,048	204	2,054	1,338	7,528	49,566	127,955	173,760
Alaska	0	5	20	200	516	226	3,841	4,973
California	2,048	140	1,649	834	4,859	43,628	101,912	134,037
Washington	0	35	296	0	1,625	4,866	16,338	24,958
Other States ^c	0	24	89	304	528	846	5,864	9,792
U.S. Total	19,227	16,697	23,220	7,825	38,792	246,225	755,736	^d 958,971

^a The design capacity of the tank.

^b Includes ethane, isobutane, pentanes plus, other hydrocarbons, hydrogen, alcohol, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke, gas, petrochemical feedstocks and miscellaneous products.

^c Includes
PAD District I: Connecticut, Delaware, Florida, Georgia, Maryland, Massachusetts, New York, North Carolina, Virginia, West Virginia.
PAD District II: Kentucky, Michigan, Minnesota, Missouri, North Dakota, Tennessee, Wisconsin.
PAD District V: Arizona, Hawaii, Nevada, Oregon.

^d Includes 21,574 thousand barrels of storage capacity at shutdown refineries and shutdown gasoline blending plants, and 46,747 thousand barrels storage capacity at operating gasoline blending plants.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 44. Refinery Receipts of Crude Oil by Method of Transportation by PAD District, 1990
(Thousand Barrels)

Method	PAD Districts					United States
	I	II	III	IV	V	
Pipeline						
Domestic	3,448	684,807	806,003	125,777	347,535	1,967,570
Foreign	21,194	406,007	375,662	26,201	1,982	831,046
Tanker						
Domestic	6,902	0	83,210	0	502,580	592,692
Foreign	399,242	0	901,880	0	80,390	1,381,512
Barge						
Domestic	2,205	1,086	89,762	0	12,647	105,700
Foreign	27,518	101	10,739	0	1,921	40,279
Tank Cars						
Domestic	6,507	0	273	0	13,219	19,999
Foreign	0	53	0	0	0	53
Trucks						
Domestic	3,430	6,854	33,023	15,941	5,441	64,689
Foreign	0	8	0	0	0	8
Total						
Domestic	22,492	692,747	1,012,271	141,718	881,422	2,750,650
Foreign	447,954	406,169	1,288,281	26,201	84,293	2,252,898

Source: Energy Information Administration, Form EIA-820, "Annual Refinery Report."

Table 45. Fuels Consumed at Refineries by PAD District, 1990
(Thousand Barrels, Except Where Noted)

Commodity	PAD Districts					United States
	I	II	III	IV	V	
Crude Oil	0	0	0	0	0	0
Distillate Fuel Oil	163	31	47	0	156	397
Residual Fuel Oil	3,844	3,304	1,176	839	1,482	10,645
Liquefied Petroleum Gases	1,187	2,437	1,008	236	3,857	8,725
Natural Gas (million cubic feet)	31,119	86,881	441,868	12,706	100,709	673,283
Still Gas	20,791	50,268	111,241	7,288	49,826	239,414
Marketable Petroleum Coke	1,365	0	0	134	1,159	2,658
Catalyst Petroleum Coke	9,330	17,810	35,729	2,272	12,415	77,556
Coal (thousand short tons)	120	13	0	0	0	133
Purchased Electricity (million kWh)	2,994	7,935	13,779	1,228	6,647	32,583
Purchased Steam (million pounds)	4,936	1,401	12,192	0	12,425	30,954
Hydrogen (million cubic feet)	0	0	0	16	0	16
Unfinished Oils	57	338	0	6	927	1,328
Other ^a	0	72	65	0	952	1,089

^a Includes finished motor gasoline, gasoline blending components, kerosene, naphtha-type jet fuel, naphtha < 401°F endpoint, and miscellaneous fuels.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 46. Reactivated and Shutdown Refineries During 1990

PAD District/Refinery	Location	Total Atmospheric Crude Oil Distillation Capacity (bbl/cd)	Total Downstream Charge Capacity (bbl/sd)	Date of Last Operation	Date Shutdown	Date Operable
Reactivated						
PAD District II		55,000	125,000	--	--	--
Indian Refining (formerly Texaco Refg. & Mktg.)	Lawrenceville, IL	55,000	125,000	--	2/87	8/90
PAD District III		13,500	0	--	--	--
CAS Refining Co. (formerly Celeron Oil & Gas)	Jennings, LA	13,500	0	--	6/83	6/90
PAD District V		10,000	6,000	--	--	--
Anchor Refining	McKittrick, CA	10,000	6,000	--	2/84	4/90
Total U.S. Reactivated		78,500	131,000	--	--	--
Puerto Rico		88,800	0	--	--	--
Arochem International (formerly Commonwealth Oil Refg. Co.) ^a	Ponce	80,000	0	--	7/83	2/90
Peerless Oil & Chemical	Ponce	8,800	0	--	8/82	2/90
Shutdown						
PAD District I		19,200	4,200	--	--	--
Phoenix Refg. Co.	St. Mary's, WV	19,200	4,200	11/90	1/91	--
PAD District III		28,300	6,800	--	--	--
Eagle Refining	Jackson, TX	1,800	1,800	1/90	10/90	--
Imron Refg., Inc. (formerly Polo Chemical)	San Leon, TX	7,000	0	never operated	8/90	--
Sabine Resources Group	Stonewall, LA	10,000	0	never operated	12/90	--
Vulcan Refining	Cordova, AL	9,500	5,000	9/90	12/90	--
PAD District V		9,600	0	--	--	--
Gibson Oil & Refining	Bakersfield, CA	9,600	0	7/87	12/90	--
Total U.S. Shutdown		57,100	11,000	--	--	--

^aThis company was a nonrespondent on the Form EIA-820, "Annual Refining Report." Crude oil distillation capacity is from the January 1991 Form EIA-810, "Monthly Refinery Report." Sufficient data were unavailable to estimate downstream capacity.

bbl/cd = Barrels per calendar day.

bbl/sd = Barrels per stream day.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 47. Refinery Sales During 1990

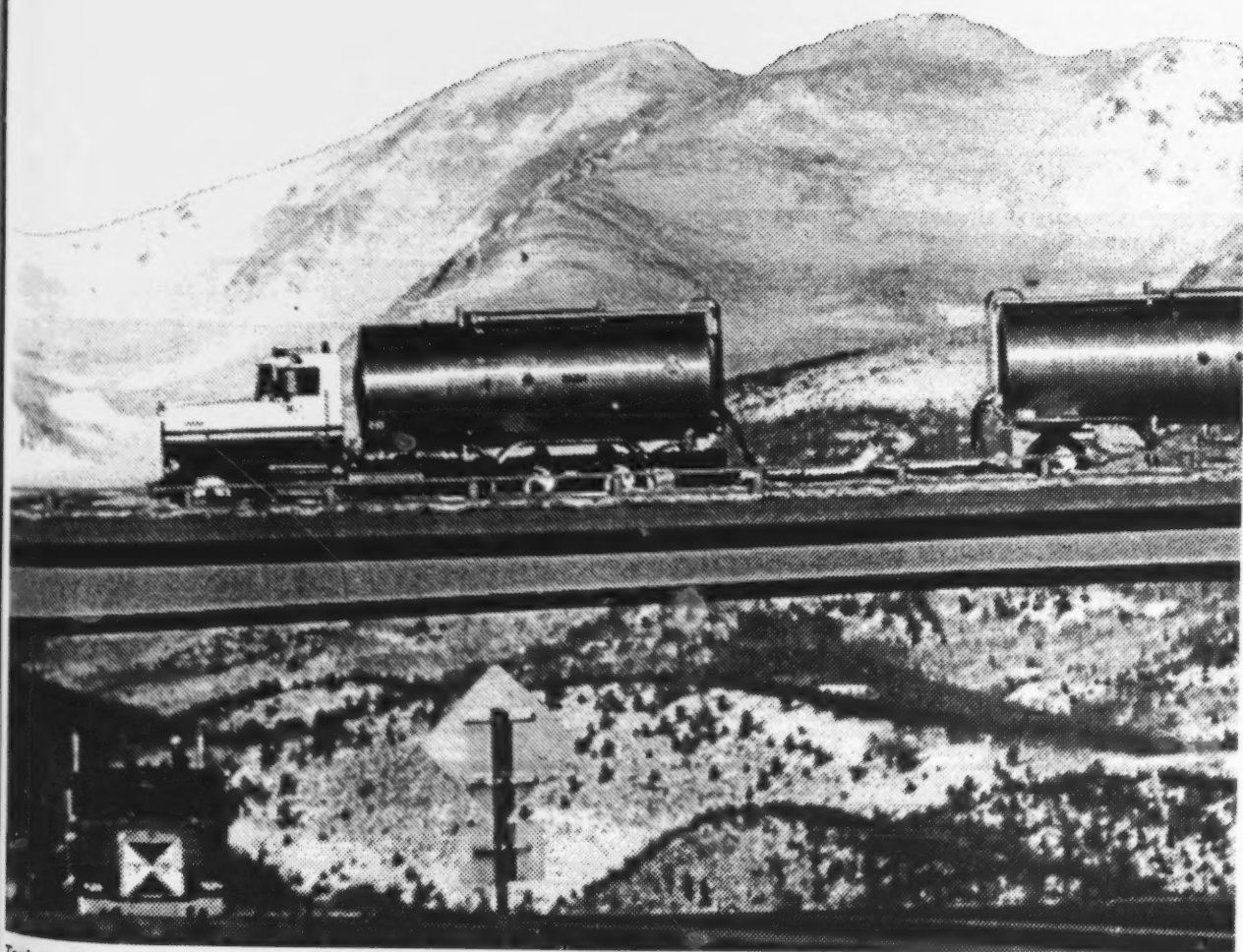
Former Owner	Total Atmospheric Crude Oil Distillation Capacity (bbl/cd)	New Owner	Date of Sale
Calcasieu Refining Lake Charles, LA	13,500	Transworld Oil USA, Inc.	8/90
Quaker State Oil Refining Bradford, PA	6,700	U.S. Petroleum Corp. Petrowax Pennsylvania, Inc.	5/90
Sargent Holdings Santa Fe Springs, CA	45,000	Powerine Oil Co.	6/90
Gary-Williams Energy Corp. Western Slope Refg. Fruita, CO	15,200	Landmark Petroleum, Inc.	12/90

bbl/cd = Barrels per calendar day.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Appendix A

District Descriptions and Maps



Tank trucks are used to pick up crude oil gathered at leases in remote areas.

Appendix A

District Descriptions and Maps

The following are the Refining Districts which make up the Petroleum Administration for Defense (PAD) Districts.

PAD District I

East Coast: District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung, and all counties east and north thereof. Also the following counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.

Appalachian No. 1: The State of West Virginia and those parts of the States of Pennsylvania and New York not included in the East Coast District.

Sub-PAD District I

New England: The States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

Central Atlantic: The District of Columbia and the States of Delaware, Maryland, New Jersey, New York, and Pennsylvania.

Lower Atlantic: The States of Florida, Georgia, North Carolina, South Carolina, Virginia and West Virginia.

PAD District II

Indiana-Illinois-Kentucky: The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and Ohio.

Minnesota-Wisconsin-North and South Dakota: The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

Oklahoma-Kansas-Missouri: The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

PAD District III

Texas Inland: The State of Texas except the Texas Gulf Coast District.

Texas Gulf Coast: The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

Louisiana Gulf Coast: The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, Tangipahoa, Washington, and all Parishes south thereof. Also the following counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following counties of the State of Alabama: Mobile and Baldwin.

North Louisiana-Arkansas: The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

New Mexico: The State of New Mexico.

PAD District IV

Rocky Mountain: The States of Montana, Idaho, Wyoming, Utah, and Colorado.

PAD District V

West Coast: The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

Petroleum Administration for Defense (PAD) Districts



Refining Districts



Appendix B

Detailed Statistics Explanatory Notes



cluster of pipes and valves that control the flow of oil at the mouth of an oil well is what oilmen call a Christmas Tree."

Detailed Statistics Explanatory Notes

The following Explanatory Notes are provided to assist in understanding and interpreting the data presented in this publication.

- Note 1. Petroleum Supply Reporting System
- Note 2. Monthly Petroleum Supply Reporting System
- Note 3. Form EIA-820: Annual Refinery Report
- Note 4. Technical Notes for Detailed Statistics Tables
- Note 5. Domestic Crude Oil Production
- Note 6. Export Data
- Note 7. Quality Control and Data Revision
- Note 8. Frames Maintenance
- Note 9. Descriptive Monthly Statistics
- Note 10. 1981 Changes in the Petroleum Supply Reporting System
- Note 11. 1983 Changes in the Petroleum Supply Reporting System
- Note 12. 1984 Changes in the Petroleum Supply Reporting System
- Note 13. 1985 Changes in the Petroleum Supply Reporting System
- Note 14. 1986 Changes in the Petroleum Supply Reporting System
- Note 15. 1987 Changes in the Petroleum Supply Reporting System
- Note 16. 1989 Changes in the Petroleum Supply Reporting System
- Note 17. 1990 Changes in the Petroleum Supply Reporting System

Note 1. Petroleum Supply Reporting System

The Petroleum Supply Reporting System (PSRS) represents a family of data collection survey forms, data processing systems and publication systems that have been consolidated to achieve comparability and consistency throughout. The survey forms that comprise the PSRS are:

Form Number	Name
EIA-800	"Weekly Refinery Report"
EIA-801	"Weekly Bulk Terminal Report"
EIA-802	"Weekly Product Pipeline Report"
EIA-803	"Weekly Crude Oil Stocks Report"
EIA-804	"Weekly Imports Report"
EIA-810	"Monthly Refinery Report"
EIA-811	"Monthly Bulk Terminal Report"
EIA-812	"Monthly Product Pipeline Report"
EIA-813	"Monthly Crude Oil Report"
EIA-814	"Monthly Imports Report"
EIA-816	"Monthly Natural Gas Liquids Report"
EIA-817	"Monthly Tanker and Barge Movement Report"
EIA-820	"Annual Refinery Report"

Forms EIA-800 through 804 comprise the Weekly Petroleum Supply Reporting System (WPSRS). A sample of all petroleum companies report weekly data to the Energy Information Administration (EIA) on crude oil and petroleum product stocks, refinery inputs and production, and crude oil and petroleum product imports. The sample of companies that report weekly is selected from the universe of companies that report on the comparable monthly surveys. Data collected from the WPSRS are used to develop estimates of the most current monthly quantities in the Summary Statistics section of the *Petroleum Supply Monthly* (PSM) and which appear in the *Weekly Petroleum Status Report*.

Forms EIA-810 through 814, 816 and 817 comprise the Monthly Petroleum Supply Reporting System (MPSRS). These surveys are used to collect detailed refinery and natural gas plant operations data; refinery, bulk terminal, natural gas plant, and pipeline stocks data; crude oil and petroleum product imports data; and data on movements of petroleum products and crude oil between Petroleum Administration for Defense Districts. A description of the MPSRS forms follows in Explanatory Note 2.

Data from these surveys are published in preliminary form in the PSM. They are published in final form in the Summary Statistics and the Detailed Statistics sections of the *Petroleum Supply Annual* (PSA), Volumes 1 and 2.

Summary information on the revision error between preliminary and final data is found in the feature article in the *PSM* entitled, "Timeliness and Accuracy of Petroleum Supply Data." The last article was published in the April 1990 issue and dealt with the years 1985 through 1989. Subsequent updates to this article will be published in the April issue of the *PSM*.

The Form EIA-820, "Annual Refinery Report," is used to collect data on refinery fuel use and consumption of steam and electricity, refinery receipts of crude oil by method of transportation, and refinery operable and storage capacity. This survey is the primary source of data in the Refinery Capacity section of the *PSA*, Volume 1 and is described in more detail in Explanatory Note 3.

Note 2. Monthly Petroleum Supply Reporting System

The Monthly Petroleum Supply Reporting System (MPSRS) was implemented in January 1983 as the result of an extensive effort by the Energy Information Administration (EIA) to integrate the collection and processing of petroleum supply data that had been collected on other survey forms for many years. The collection of monthly petroleum supply statistics began as early as 1918 when the U.S. Bureau of Mines began collecting data on refinery operations and crude oil stocks and movements. The collection systems were further expanded in 1925 to include natural gas plant liquids production and storage, imports of crude oil and petroleum products and storage and movement of petroleum products in 1959, and tanker and barge movements of crude oil and petroleum products in 1964. Since their inception, each survey has undergone numerous changes, but the MPSRS was the first effort to make them all consistent and comparable.

The forms that comprise the MPSRS are:

Form Number	Name
EIA-810	"Monthly Refinery Report"
EIA-811	"Monthly Bulk Terminal Report"
EIA-812	"Monthly Product Pipeline Report"
EIA-813	"Monthly Crude Oil Report"
EIA-814	"Monthly Imports Report"
EIA-816	"Monthly Natural Gas Liquids Report"
EIA-817	"Monthly Tanker and Barge Movement Report"

Respondent Frame

Form EIA-810, "Monthly Refinery Report" - Operators of all operating and idle petroleum refineries and blending plants located in the 50 States, the District of Columbia,

Puerto Rico, the Virgin Islands, Guam and other U.S. possessions. Approximately 240 respondents report on the Form EIA-810.

Form EIA-811, "Monthly Bulk Terminal Report" - Every bulk terminal operating company located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and other U.S. possessions. A bulk terminal is primarily used for storage and/or marketing of petroleum products and has a total bulk storage capacity of 50,000 barrels or more, and/or receives petroleum products by tanker, barge, or pipeline. Bulk terminal facilities associated with a product pipeline are included. Approximately 350 respondents report on the Form EIA-811.

Form EIA-812, "Monthly Product Pipeline Report" - All product pipeline companies that carry petroleum products (including interstate, intrastate, and intracompany pipelines) in the 50 States and the District of Columbia. Approximately 80 respondents report on the Form EIA-812.

Form EIA-813, "Monthly Crude Oil Report" - All companies which carry or store 1,000 barrels or more of crude oil. Included in this survey are gathering and trunk pipeline companies (including interstate, intrastate, and intracompany pipelines), crude oil producers, terminal operators, storers of crude oil (except refineries), and companies transporting Alaskan crude oil by water in the 50 States and the District of Columbia. Approximately 170 respondents report on the Form EIA-813.

Form EIA-814, "Monthly Imports Report" - All companies, including subsidiary or affiliated companies, that import crude oil or petroleum products (1) into the 50 States and the District of Columbia, (2) into Puerto Rico, the Virgin Islands and other U.S. possessions (Guam, Midway Islands, Wake Island, American Samoa, and Northern Mariana Islands), and (3) from Puerto Rico, the Virgin Islands and other U.S. possessions into the 50 States and the District of Columbia. Imports into Foreign Trade Zones located in the 50 States and the District of Columbia are considered imports into the 50 States and the District of Columbia and must be reported. A report is required only if there has been an import during the month unless the importer has been selected as part of a sample to report every month regardless of activity. Approximately 860 respondents report on the Form EIA-814.

Form EIA-816, "Monthly Natural Gas Liquids Report" - Operators of all facilities that extract liquid hydrocarbons from a natural gas stream (natural gas processing plant) and/or separate a liquid hydrocarbon stream into its component products (fractionator). Approximately 800 respondents report on the Form EIA-816.

Form EIA-817, "Monthly Tanker and Barge Movement Report"- All companies that have custody of crude oil or petroleum products transported by tanker or barge between Petroleum Administration for Defense (PAD) Districts or between the Panama Canal and the United States. For purposes of this report, custody is defined as physical possession of crude oil or petroleum products on a company-owned tanker or barge. Also, companies which lease vessels or contract for the movement of crude oil or petroleum products on a tanker or barge between PAD Districts or between the Panama Canal and the United States are considered to have custody. Approximately 35 respondents report on the Form EIA-817.

Description of Survey Forms

The Form EIA-810, "Monthly Refinery Report," is used to collect data on refinery input and capacity, sulfur content and API gravity of crude oil, and data on supply (beginning stocks, receipts, and production) and disposition (inputs, shipments, fuel use and losses, and ending stocks) of crude oil and refined products.

The Form EIA-811, "Monthly Bulk Terminal Report," is used to collect data on end-of-month stock levels of finished petroleum products by State in the custody of the bulk terminal company regardless of ownership. Leased tankage at other facilities is excluded. All domestic and foreign stocks held at bulk terminals and in-transit thereto, except those in-transit by pipeline are included. Petroleum products in-transit by pipeline are reported by pipeline operators on Form EIA-812, "Monthly Product Pipeline Report."

The Form EIA-812, "Monthly Product Pipeline Report," is used to collect data on end-of-month stock levels and movements of petroleum products transported by pipeline. Intermediate movements for pipeline systems operating in more than two PAD Districts are included.

The Form EIA-813, "Monthly Crude Oil Report," is used to collect data on end-of-month stocks of crude oil held at pipeline and tank farms (associated with the pipelines) and terminals operated by the reporting company. Also, crude oil consumed by pipelines and on leases as pump fuel, boiler fuel, etc., is reported. Data are reported on a PAD District basis.

Total Alaskan crude oil stocks in-transit by water (including stocks held at transshipment terminals between Alaska and the continental United States) to the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands are also reported by the transporting company having custody of the stocks.

Inter-PAD District movements of crude oil by pipeline are collected by the shipping and receiving PAD District.

Intermediate movements for pipeline systems operating in more than two PAD Districts are not included.

The Form EIA-814, "Monthly Imports Report," is used to collect data on imports of crude oil and petroleum products (1) into the 50 States and the District of Columbia, (2) into Puerto Rico, the Virgin Islands, and other U.S. possessions (Guam, Midway Islands, Wake Island, American Samoa, and Northern Mariana Islands), and (3) from Puerto Rico, the Virgin Islands, and other U.S. possessions into the 50 States and the District of Columbia. Imports into Foreign Trade Zones located in the 50 States and the District of Columbia are considered imports into the 50 States and the District of Columbia.

The type of commodity, port of entry, country of origin, quantity (thousand barrels), sulfur percent by weight, API gravity, and name and location of the processing or storage facility are reported. Sulfur percent by weight is requested for crude oil, crude oil burned as fuel, and residual fuel oil only. API gravity is requested for crude oil only. The name and location of the processing or storage facility is requested for crude oil, unfinished oils, other hydrocarbons/alcohol, and blending components only.

The Form EIA-816, "Monthly Natural Gas Liquids Report," is used to collect data on the operations of natural gas processing plants and fractionators. Beginning and end-of-month stocks, receipts, inputs, production, shipments, and plant fuel use and losses during the month are collected from operators of natural gas processing plants. End-of-month stocks are collected from fractionators.

The Form EIA-817, "Monthly Tanker and Barge Movement Report," is used to collect data on the movements of crude oil and petroleum products between PAD Districts. Data are reported by shipping and receiving PAD District and sub-PAD District. Shipments to and from the Panama Canal are also included if the shipment was delivered to the Canal.

Collection Methods

Survey forms for the MPSRS can be submitted by mail, facsimile, or electronic transmission. Completed forms are required to be postmarked by the 20th calendar day following the end of the report month. Receipt of the reports is monitored using an automated respondent mailing list. Telephone follow-up calls are made to nonrespondents prior to the publication deadline.

Response Rate

The response rate is generally 98 to 100 percent. Chronic nonrespondents and late filing respondents are contacted in writing and reminded of their requirement to report.

Companies that file late or fail to file are subject to criminal fines, civil penalties, and other sanctions as provided by Section 13(i) of the Federal Energy Administration (FEA) Act.

Data Imputation

Imputation is performed for companies that fail to file Forms EIA-810 through 813 and 816. For such companies, previous monthly values are used for current values. The ending stock value of the previous month is used as the value for beginning and ending stocks for the current month. Data for nonrespondents on the Forms EIA-814 and 817 are not imputed because these data series, by respondent, are highly variable.

Confidentiality

The information contained on Forms EIA-810 through 813, 816 and 817 are kept confidential to the extent that they satisfy the criteria for exemption in the Freedom of Information Act (FOIA), 5 U.S.C. 552, the Department of Energy (DOE) regulations, 10 C.F.R. 1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. 1905. The information contained on Form EIA-814 is not considered confidential and historically has not been treated as such.

Upon receipt of a request for this information under the FOIA, the DOE shall make a final determination whether the information is exempt from disclosure in accordance with the procedures and criteria provided in the regulations. To assist us in this determination, respondents should demonstrate to the DOE that, for example, their information contains trade secrets or commercial or financial information whose release would be likely to cause substantial harm to their company's competitive position. A letter accompanying the submission that explains (on an element-by-element basis) the reasons why the information would be likely to cause the respondent substantial competitive harm if released to the public would aid in this determination. A new justification does not need to be provided each time information is submitted on the form, if the company has previously submitted a justification for that information and the justification has not changed.

Except as otherwise provided by law, the information may be made available in response to an order of a Court of competent jurisdiction, or, upon request, to other components of the DOE, to any Committee of Congress, the General Accounting Office, or other Congressional agencies authorized by law to receive such information. Detailed provisions of the restrictions on the disclosure of this information can be found in the Policy on the Disclosure of Individually Identifiable Energy Information in the Possession of the EIA (45 *Federal Register* 59812 (1980)).

The data collected on Forms EIA-810 through 814, 816, and 817 appear in EIA publications such as *Petroleum Supply Monthly* (PSM), *Monthly Energy Review*, *Petroleum Supply Annual* (PSA), and the *Annual Energy Review*.

Data on the breakdown between liquefied refinery gases and olefins is suppressed on PSM Table 29, "Refinery Net Production of Finished Petroleum Products by PAD and Refining Districts" and the corresponding PSA table to avoid disclosure of company identifiable data.

Data on PSM Table 52, "Refinery, Bulk Terminal, and Natural Gas Plant Stocks of Selected Petroleum Products by State" and the corresponding PSA table are subject to statistical nondisclosure procedures. Statistics representing data aggregated from less than three companies or aggregated data representing 60 percent or more of a single company's data are suppressed.

With the exception of Tables 29 and 52 in the PSM (and corresponding PSA tables), the tables are not subject to statistical nondisclosure procedures. Thus, there may be some table cells which are based on data from only one or two respondents, or which are dominated by data from one or two large respondents. In these cases, it may be possible for a knowledgeable user of the data to make inferences about the data reported by a specific respondent. Company specific data are also provided to other DOE offices for the purpose of examining operations in the context of emergency response planning and actual emergencies.

Note 3. Form EIA-820: Annual Refinery Report

Refinery capacity data collection was begun in 1918 by the Bureau of Mines, then in the Department of Commerce, and was operated on a voluntary basis until 1980. In 1980, the mandatory Energy Information Administration (EIA) Form EIA-177, *Capacity of Petroleum Refineries*, was implemented. Information on refining capacity was expanded to include not only current year operations, two-year projections, and refinery input/production data. Working storage capacity data was also added to the form and product categories were added for total coverage. Information on refinery downstream facilities was expanded to include a breakdown of thermal operations and to add vacuum distillation, catalytic hydrorefining and hydrotreating. Production capacity was also added to include information on isomerization, alkylation, aromatics, asphalt/road oil, coking, lubricants and hydrogen.

In 1983, the form was revised to improve the consistency and quality of the data collected by the EIA and redesign-

nated as Form EIA-820, "Annual Refinery Report." Two sections for data previously reported monthly were added: (1) refinery receipts of crude oil by method of transportation, and (2) fuels consumed for all purposes at refineries. Also, the second year projections on refining capacity were eliminated. As a result of a study conducted by the EIA evaluating motor gasoline data collected by the Federal Highway Administration (FHWA) and by the EIA, motor gasoline blending plants were included for the first time to the respondent frame in order to produce more accurate statistics on the production of motor gasoline.

In 1987, the form was revised to reduce respondent burden and to better reflect current refinery operations through updated terminology. Information on projected input/production of refinery processing facilities was deleted. Several categories under catalytic hydrotreating were combined: naphtha and reformer feeds were combined into a single category as well as residual fuel oil and other. Thermal cracking types, gas oil and "other" were also combined into a single category. Catalytic reforming types, conventional and bi-metallie were replaced with low and high pressure processing units. Two new categories were added: fuels solvent deasphalting was added to downstream charge capacity and sulfur recovery was added to production capacity.

Respondent Frame

The respondent frame consists of all operating and idle petroleum refineries (including new refineries under construction), motor gasoline blending plants, shutdown refineries and shutdown motor gasoline blending plants with usable storage capacity, located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam and other U.S. possessions. As of January 1, 1991, there were 202 refineries and 27 motor gasoline blending plants operating in the 50 States. The following is a list of motor gasoline blending plants and their locations that operated during 1990.

American Refg Group, Inc. Indianola, Pennsylvania	Northville Industries Corp. Linden, New Jersey
Citgo Petroleum Corp. Linden, New Jersey	Northville Industries Corp. Setauket, New York
Citgo Petroleum Corp. East Chicago, Indiana	Oiltanking of Texas Inc. Houston, Texas
Citgo Petroleum Corp. East Braintree, MA	Petro-Diamond Term. Co. Long Beach, California
Citgo Petroleum Corp. Selma, North Carolina	Phillips 66 Co. Jefferson City, Missouri

Citgo Petroleum Corp.
Chesapeake, Virginia

Phillips 66 Co.
East Chicago, Indiana

Citgo Petroleum Corp.
Richmond, Virginia

Phillips 66 Co.
East St. Louis, Illinois

Flying J
Cutbank, Montana

Phillips 66 Co.
Decatur, Illinois

GATX Terminal Corp.
Pasadena, Texas

Tropicana Energy Co.
Irving, Texas

GATX Terminal Corp.
Carteret, New Jersey

Westec Petroleum Inc.
Grand Junction, Colorado

Hartford/Woodriver Term.
Hartford, Illinois

Westec Petroleum Inc.
Denver, Colorado

IDA Gasoline Co., Inc.
Belcher, Louisiana

Wickland Oil Terminal Co.
Crockett, California

Intercontinental Term.Co.
Deer Park, Texas

Wyatt Inc.
New Haven, Connecticut

New Haven Terminals Inc.
East Haven, Connecticut

The respondent frame is maintained by monitoring the monthly Form EIA-810, "Monthly Refinery Report," and industry publications for changes and developments in the petroleum industry such as refinery sales, mergers and new operations.

Description of Survey Form

The Form EIA-820 is used to collect data on fuels consumed for all purposes at the refinery during the preceding year; refinery receipts of crude oil by method of transportation during the preceding year; current and next year projections for operable atmospheric crude oil distillation capacity, downstream charge capacity and production capacity; and current year working and shell storage capacity for crude oil and petroleum products at the refinery.

Collection Methods

The Form EIA-820 is sent to respondents in December. Survey forms can be submitted by mail or facsimile. Completed forms are required to be postmarked by the 15th day of February of the current report year. Receipt of the reports is monitored using an automated respondent mailing list. Telephone follow-up calls are made to secure responses from those companies failing to report by February 15th.

Response Rate

The response rate for the Form EIA-820 is normally very high. Data are estimated and non-compliance procedures are implemented for those companies still not reporting data by close-out for the report year. For the January 1, 1991 survey, there were two nonrespondents.

Data Imputation

Imputation is performed for companies that fail to file prior to the publication deadline. For the January 1, 1991 survey, only one U.S. refinery did not respond, and its total operable capacity is estimated to be less than 0.3 percent of the U.S. total. The second nonrespondent, a Puerto Rico refinery, is not part of the U.S. total. Values for these companies are imputed from data reported on the previous year's Form EIA-820 and/or from data reported on Form EIA-810, "Monthly Refinery Report," for that company. For most surveyed items, the value imputed for nonrespondents is the value that company reported on the Form EIA-820 for the previous year. For three categories of information however, the imputed value is also based on their data from the Form EIA-810 as follows:

Section 1: Fuel, Electricity, and Steam Consumed for all Purposes at Refineries

Data are imputed for crude oil, distillate and residual fuel oil, liquefied petroleum gases, still gas, and marketable and catalyst petroleum coke based upon data reported on the monthly Form EIA-810. A ratio of the fuel use reported on the previous year's annual report to the fuel use and losses reported on the aggregated monthly data for the previous year is derived for these product categories. This ratio is then applied to the monthly aggregated data for the current year for similar product categories.

Estimates for natural gas, coal, electricity and steam are taken directly from data reported on the previous year's annual Form EIA-820.

Section 2: Refinery Receipts of Crude Oil by Method of Transportation

The imputation methodology for this section is based on data reported on both the monthly Form EIA-810 and the annual Form EIA-820. Annual refinery receipts of domestic and foreign crude oil for a nonrespondent are imputed by aggregating the values for the refinery on the monthly survey. These values are allocated to the method of transportation by using the percentages reported for the refinery in the previous year. Data for one U.S. refinery was imputed for the 1991 survey. The difference between the values reported on the two surveys by all respondents is 0.3 percent.

Section 3: Operable and Storage Capacity as of January 1

Operable atmospheric crude oil distillation capacity in barrels per calendar day is collected on the monthly Form EIA-810 as of the first day of each month and on the annual Form EIA-820 as of January 1. As part of the editing process for the Form EIA-820, these two values are compared. Companies are contacted and any discrepancies are resolved by the time of publication. Imputed values for operable atmospheric crude oil distillation capacity in barrels per calendar day are taken directly from the January Form EIA-810. A barrels per stream day capacity is then derived by dividing the reported barrels per calendar day capacity by .95.

Current year and projected year data for downstream charge capacity, production capacity, and data for working and shell storage capacity are taken directly from the previous year's annual report.

Confidentiality

Information on operable atmospheric crude oil distillation capacity, downstream charge capacity, and production capacity on Form EIA-820 are not considered as confidential, and historically have not been treated as such. Company identifiable data are published in the *Petroleum Supply Annual* (PSA), Volume 1, Tables 36 through 39.

Other data on the Form EIA-820 are kept confidential and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C.552, Department of Energy (DOE) regulations, 10 C.F.R.1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C.1905.

Upon receipt of a request for this information under the FOIA, the DOE shall make a final determination whether the information is exempt from disclosure in accordance with the procedures and criteria provided in the regulations. To assist us in this determination, respondents should demonstrate to the DOE that, for example, their information contains trade secrets or commercial or financial information whose release would be likely to cause substantial harm to their company's competitive position. A letter accompanying the submission that explains (on an element-by-element basis) the reasons why the information would be likely to cause the respondent substantial competitive harm if released to the public would aid in this determination. A new justification does not need to be provided each time information is submitted on the form, if the company has previously submitted a justification for that information and the justification has not changed.

Except as otherwise provided by law, the information may be made available in response to an order of a Court of competent jurisdiction, or, upon request, to other com-

ponents of the DOE, to any Committee of Congress, the General Accounting Office, or other Congressional agencies authorized by law to receive such information. Detailed provisions of the restrictions on the disclosure of this information can be found in the Policy on the Disclosure of Individually Identifiable Energy Information in the possession of the EIA (45 *Federal Register* 59812 (1980)).

The data collected on Form EIA-820, "Annual Refinery Report," is used to report aggregate statistics on and conduct analyses of the operation of U.S. petroleum refineries and blending plants. The data appear in EIA publications such as *PSA*, and the *Annual Energy Review*. Company specific data are also provided to other DOE offices for the purpose of examining specific refinery operations in the context of emergency response planning and actual emergencies.

The tables pertaining to storage capacity, refinery receipts of crude oil by method of transportation and fuels consumed at the refinery published in the *PSA* are not subject to statistical nondisclosure procedures. Thus, there may be some table cells which are based on data from only one or two respondents, or which are dominated by data from one or two large respondents. In these cases, it may be possible for a knowledgeable user of the data to make inferences about the data reported by a specific respondent.

Quality Control

There are two types of errors usually associated with data produced from a survey - sampling errors and nonsampling errors. Sampling errors are those errors that occur when survey estimates are based on a sample rather than being derived from a complete census of the frame. Nonsampling errors are those which can arise from: (1) the inability to obtain data from all companies in the frame or sample (nonresponse) and the method used to account for nonresponses; (2) definitional difficulties and/or improperly worded questions which lead to different interpretations; (3) mistakes in recording or coding the data obtained from respondents; and (4) other errors of collection, response, coverage, and estimation. Because estimates from the Form EIA-820 survey are based on a complete census of the frame of petroleum refineries and motor gasoline blending plants, there is no sampling error in the data presented in this report. The data, however, are subject to nonsampling errors. Quality control procedures are employed in the collection and editing operations to minimize misrepresentation and misreporting. Non-response follow-up procedures are employed to reduce the number of nonrespondents, and procedures employed to impute missing data, introduce a minimal amount of error, given the relatively small volume of imputed data.

Resubmissions

Resubmissions are required whenever an error greater than 5 percent of the true value is discovered. In the event of a reporting error, company reports are updated after contact with the company and are followed up by corrected report resubmissions. Late submissions or resubmissions received after the publication date are entered into a "working" file. This file contains the most up-to-date data for the Form EIA-820 and is used to edit next year's data.

Note 4. Technical Notes for Detailed Statistics Tables

The detailed statistics tables in the *Petroleum Supply Annual* provide complete supply and demand information for the previous year. The tables are organized to locate National and Petroleum Administration for Defense (PAD) District summary data at the front followed by tables on crude oil and petroleum product production, import/export data, stocks information, and lastly, data on crude oil and petroleum product movements. To assist in the interpretation of these tables, the following technical notes are provided. Column and row headings are defined in the Glossary.

Supply

Field Production - Field production is the sum of crude oil production, natural gas plant liquids production, and other liquids.

Crude oil production is an estimate based on data received from State conservation agencies and the Mineral Management Service of the U.S. Department of the Interior. Refer to Explanatory Note 5 for further details.

Field production of natural gas plant liquids is published on a net basis (i.e., production minus inputs) in this column.

Other liquids field production is calculated by adding the stock change to the refinery inputs.

Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Refinery Production - Published production of these products equal refinery production minus refinery input. Refinery production of other hydrocarbons, hydrogen and alcohol, unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input. Negative refinery production will occur when the

amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Unaccounted for Crude Oil - This column is a balancing item for crude oil. This data element represents the difference between crude oil supply and disposition. Crude oil supply is the sum of field production and imports. Crude oil disposition is the sum of stock change, losses, refinery inputs, exports, and products supplied. A positive result indicates that refiners and exporters reported use of more crude oil than was reported to have been available to them. (This occurs, for example, when imports are undercounted due to late reporting or other problems.) A negative result indicates that more crude oil was reported to have been supplied to refiners and exporters than they reported to have used.

Disposition

Stock Change - This column is calculated as the difference between the Ending Stocks column of this table and the Ending Stocks column of the prior month's publication. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

Crude Losses - The volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc., as opposed to refining processing losses or gains.

Refinery Inputs - Refinery inputs of crude oil and intermediate materials (unfinished oils, gasoline blending components, other hydrocarbons and alcohol, liquefied petroleum gases, and pentanes plus) that are processed at refineries to produce finished petroleum products.

Crude oil inputs represents total crude oil (domestic and foreign) input to atmospheric crude oil distillation units and other refinery processing units (i.e., catalytic cracking units, cokers).

Inputs of natural gas liquids are natural gas liquids received from natural gas plants for blending and processing. Published inputs of natural gas liquids are reported on a gross basis.

Inputs of unfinished oils, motor and aviation gasoline blending components, and other hydrocarbons and alcohol are published on a net basis (i.e., refinery input minus refinery production).

Inputs of finished petroleum products are published on a net basis (i.e., refinery production minus refinery inputs) and displayed under the refinery production column.

Exports - Exports include crude oil shipments from the 50 States to Puerto Rico, and the Virgin Islands.

Products Supplied - Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, (plus net receipts on a PAD District basis), minus stock change, minus crude losses, minus refinery inputs, minus exports.

Products supplied indicates those quantities of petroleum products supplied for domestic consumption. Occasionally, the result for a product is negative because total disposition of the product exceeds total supply. Negative products supplied may occur for a number of reasons: (1) product reclassification has not been reported; (2) data were misreported or reported late; (3) in the case of calculations on a PAD District basis, the figure for net receipts was inaccurate because the coverage of inter-district movements was incomplete; and (4) products such as gasoline blending components and unfinished oils have entered the primary supply channels with their production not having been reported, e.g., streams returned to refineries from petrochemical plants.

Product supplied for crude oil is the sum of crude oil burned on leases and by pipelines as fuel. Prior to January 1983, crude oil burned on leases and by pipelines as fuel were reported as either distillate or residual fuel oil and were included in product supplied for these products.

Yields

The refinery yield of finished motor gasoline is calculated by subtracting the inputs of pentanes plus, liquefied petroleum gases, other hydrocarbons/alcohol and motor gasoline blending components from the production of finished motor gasoline before dividing by the sum of crude oil input and unfinished oils input (net).

The refinery yield of finished aviation gasoline is calculated by subtracting the inputs of aviation gasoline blending components from the production of finished aviation gasoline before dividing by the sum of crude oil input and unfinished oils input (net).

Refinery yields for all products (except finished motor gasoline and finished aviation gasoline) are calculated by dividing the production for each product by the sum of crude oil input and unfinished oils input (net) reported in the U.S. total.

Stocks

Primary stocks of petroleum products do not include either secondary stocks held by dealers and jobbers or tertiary stocks held by consumers.

Movements

Movements of crude oil by pipeline between PAD Districts include trunk pipeline companies (interstate, intrastate, and intracompany pipelines). Intermediate movements for crude oil pipeline systems operating in more than two PAD Districts are not included.

Movements of petroleum products by pipeline between PAD Districts include trunk pipeline companies (interstate, intrastate and intracompany pipelines). Intermediate movements for product pipeline systems operating in more than two PAD Districts are included. For example, a shipment originating in PAD District 3, passing through PAD District 2 to PAD District 1, is reported as a movement from PAD District 3 to PAD District 2 and also from PAD District 2 to PAD District 1.

Waterborne movements of crude oil and petroleum products between PAD Districts include all shipments of crude oil or petroleum products for which the transporter has custody at the time of shipment. Custody is defined as physical possession of crude oil or petroleum products on a company-owned tanker and barge.

Note 5. Domestic Crude Oil Production

The Energy Information Administration (EIA) collects monthly crude oil production data on an ongoing basis. Data on crude oil production for States are reported to the EIA by State government agencies. Data on crude oil production for Federal offshore areas are reported to the EIA by the Minerals Management Service of the U.S. Department of the Interior and the Conservation Committee of California Oil Producers. Currently, all except four crude oil producing States (Michigan, New York, Ohio, and Pennsylvania) report production on a monthly basis. These four States report crude oil production on an annual basis.

The EIA incorporates production data into its Crude Oil Production System (COPS) as the data are received from the reporting agencies. EIA publications show portions of this database at specific points in time. Table 14 of this publication presents the 1990 crude oil production data received by the EIA as of April 1991. Crude oil production data for 1990 received after April 1991 will be published later as an appendix in the following year's *Petroleum Supply Annual* (PSA). Table C1 of this publication presents the 1989 crude oil production a year after it was published in the PSA 1989.

Note 6. Export Data

Each month the Energy Information Administration (EIA) receives magnetic tapes of aggregated export statistics from the U.S. Bureau of the Census (EM-522 and EM-594).

Census export statistics used in the *Petroleum Supply Annual* reflect both government and nongovernment exports of domestic and foreign merchandise from the United States (the 50 States and the District of Columbia) to foreign countries and U.S. possessions, without regard to whether or not the exportation involves a commercial transaction. The following types of transactions are excluded from the statistics:

- (1) Merchandise shipped in transit through the United States from one foreign country to another, when documented as such with U.S. Customs.
- (2) Bunker fuels and other supplies and equipment for use on departing vessels, planes, or other carriers engaged in foreign trade.

Source of Export Information

The official U.S. export statistics are compiled by the U.S. Bureau of the Census. Exporters are required to file export documents with U.S. Customs officials (Customs Form 7525).

Country and Area of Destination

The country of destination is defined as the country of ultimate destination or the country where the goods are to be consumed, further processed, or manufactured, as known to the shipper at the time of exportation. If the shipper does not know the country of ultimate destination, the shipment is credited to the last country to which the shipper knows that the merchandise will be shipped in the same form as it was when exported.

Note 7. Quality Control and Data Revision

Quality Control

The Energy Information Administration (EIA) monitors the supply and disposition of crude oil, petroleum products, and natural gas liquids in the United States. Through a tracking system, the EIA provides insight into the activities of primary operators and distributors in the petroleum industry. The tracking system, known as the Petroleum Supply Reporting System (PSRS), consists of data on production, inputs, imports, inventories, move-

ments, and other petroleum-related data collected on weekly, monthly, and annual surveys.

Survey forms are periodically reviewed for completeness, meaningfulness, and clarity. Modifications are made, when needed, to maintain efficient measures of the intended data items and to track product movement accurately throughout the industry. Through this process, the EIA can maintain consistency among forms, minimize respondent burden, and eliminate ambiguity.

In any survey, nonresponse can be a major concern because the effects can cause serious bias in survey results. Nonresponse occurs whenever requested information is not obtained from all units in a survey. The PSRS surveys have a very high response rate. In general, response rates average above 95 percent for the weekly survey and above 98 percent for monthly surveys. Whenever survey responses are not received in time to be included in published statistics, the data are imputed. Although imputing for missing data may not eliminate the total error associated with nonresponse, it can serve to reduce the error. The data reported in the previous month are used as imputed values for missing data for all surveys except the Forms EIA-814, "Monthly Imports Report," and EIA-817, "Monthly Tanker and Barge Movement Report." There is no imputation procedure for these surveys because these data series, by respondent, are highly variable.

Response error is the major factor affecting the accuracy of PSRS data. Response, or reporting error, is the difference between the true value and the value reported on a survey form. Response error can occur for any number of reasons. For example, figures may be entered incorrectly when written on forms by the respondent, or errors may result from the misunderstanding of survey form instructions or definitions. Response error can also occur from the use of preliminary data when final data are not available. This can result in differences between published preliminary and final data. To help detect and minimize probable reporting errors, automated editing procedures are used to check current data for consistency with past data, as well as for internal consistency (e.g., totals equal to the sums of the parts), and to flag those data elements that fail edit criteria.

Errors can also be introduced during data processing. For example, while creating computer data files, key errors can occur in transcribing or coding the data; or information can be entered into the wrong cell. Using well designed edit criteria which examine orders of magnitude, cell position, and historical reporting patterns, many of these errors can be identified and corrected.

A principal objective of PSRS surveys is to provide an accurate picture of petroleum industry activities. As part of this objective, a comparison of the data collected on the

PSRS with other similar data series from sources outside of the Petroleum Supply Division is performed each year. The results of this data comparison are published in the *Petroleum Supply Monthly* (PSM) feature article, "Comparisons of Independent Statistics on Petroleum Supply."

Resubmissions

Resubmissions are any changes to the originally submitted data that were either requested by the EIA or initiated by respondent. Resubmissions are compared with the original submission and processed at the time of receipt. The Resubmission Tracking System (RTS) is run after resubmissions have been processed for the month. The RTS enables the user to study major products and data series to see how company resubmissions impact published data on a month by month basis. During the processing year, a summary of the effect of these resubmissions to major series is provided in Appendix C of the PSM.

Late Response

Respondents who fail to respond within the prescribed time limit (25th day following the end of the report month) become nonrespondents for that particular report period and are contacted by phone to obtain the current month's data. Respondents who are chronically late (i.e., three consecutive months) are notified by EIA either by letter or telephone.

Nonresponse

Follow-up action is taken when a company fails to respond adequately to data requests from the EIA. Preliminary attempts to gather delinquent reports are made by phone. Noncompliance form letters are sent to those companies that have not submitted reports and have not responded to data requests by phone.

Note 8. Frames Maintenance

The Petroleum Supply Division (PSD) maintains complete lists of respondents to its monthly surveys. Each survey has a list of companies and facilities required to submit petroleum activity data. This list is known as the survey frame. Frame maintenance procedures are used to monitor the status of petroleum companies and facilities currently contained in each survey frame as well as to identify new members to be added to the frame. As a result, all known petroleum supply organizations falling within the definition of "Who Must Submit" participate in the survey.

The activities for frames maintenance are conducted within three time frames: monthly, annually, and triennially. Monthly frames maintenance procedures focus on ex-

aming several frequently published industry periodicals that report changes in status (births, deaths, sales, and acquisitions) of petroleum facilities producing, transporting, importing, and/or storing crude oil and petroleum products. These sources are augmented by articles in newspapers, letters from respondents indicating changes in status, and information received from survey systems operated by other offices. Survey managers review these sources to monitor changes in company operations and to develop lists of potential respondents. These activities assure coverage of the reporting universe and maintain accurate facility information on addresses and ownership. Annual frames maintenance focuses on re-evaluating the "must submit" companies filing the Form EIA-814.

To supplement the monthly and annual frames maintenance activities and to provide more comprehensive coverage, the PSD conducts a comprehensive triennial frames investigation. These triennial evaluations result in the reassessment and recompilation of the complete frame for each survey.

In January 1975, 1981, 1983, and 1984, numerous respondents were added to bulk terminal and pipeline surveys affecting subsequent stocks reported and stock change calculations. Table B1 displays the end-of-year stocks, in million barrels using the expanded coverage (new basis).

Table B1. New Basis Stocks¹
(Million Barrels)

Commodity	1974	1980	1982	1983
Crude Oil				
Total	265	488	645	723
Other Primary	265	380	351	379
Crude Oil and Petroleum Products	1,121	1,425	1,461	1,454
Motor Gasoline				
Total	225	263	244	222
Finished	NA	NA	202	186
Distillate Fuel Oil	224	205	186	140
Residual Fuel Oil	75	91	69	49
Jet Fuel				
Total	30	42	39	39
Kerosene-type	24	36	32	32
Liquefied Petroleum Gases	113	128	102	108
Other Petroleum Products	190	207	219	210

¹ Stocks as of December 31.

Note 9. Descriptive Monthly Statistics

The universe of each of the Petroleum Supply surveys (refinery, bulk terminal, pipeline, crude oil stock, import, etc.) is relatively small and ever-changing due to company births, deaths, mergers and splits. The frequency distributions of the petroleum supply variables are non-normal,

highly variable, positive skewed and leptokurtic; that is, there are many small units and few large ones. Zeros often dominate the responses; that is, not all of the sampling units produce and/or store all products.

The statistics described in Table B2 were calculated from the monthly surveys over a 12-month period and display the following petroleum supply variables:

- (1) The number of active sampling units (respondents).
- (2) The number of sampling units reporting nonzero values (nonzero respondents).
- (3) The average of nonzero values reported in thousand barrels (average).
- (4) The standard deviation of nonzero values reported in thousand barrels (standard deviation).

Note 10. 1981 Changes in the Petroleum Supply Reporting System

Petroleum statistics contained in this report up through 1980 were developed using definitions, concepts, reporting procedures, and aggregation methods that are consistent with those developed by the U.S. Bureau of Mines. Research conducted by the Energy Information Administration (EIA) in 1979 and 1980 indicated that changes had occurred in the petroleum industry that were not being adequately reflected in EIA's reporting system.

The EIA reporting forms, definitions, and procedures were modified beginning in January 1981 to describe industry operations more accurately. Unfortunately, empirical information is not available to precisely measure the data shortcomings through 1980. Estimates of the magnitudes of differences in the major data series are described below to form a basis for comparing 1979, 1980, and 1981 data.

Motor Gasoline

Prior to 1979, the EIA product-supplied series for motor gasoline was consistently about 2 percent lower than the Federal Highway Administration (FHWA) gasoline sales data series, which is derived from State tax receipts. The difference increased to about 3 percent in 1979 and 1980. There were two primary causes for this growing difference. First, refinery operations, particularly the flows of unfinished oils and the redesignation of some finished products, were not being accurately described on the EIA survey forms. Second, a large amount of gasoline was being produced away from refineries at "downstream blending stations" to take advantage of provisions in

Table B2. Descriptive Statistics for Selected Petroleum Supply Variables

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Refinery Gross Input to Atmospheric Crude Oil Distillation Units												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	189	185	185	183	185	186	189	188	187	186	186	182
Average	2242	2073	2192	2172	2275	2241	2364	2347	2294	2179	2127	2208
Standard Deviation	2489	2319	2450	2438	2590	2488	2695	2639	2590	2515	2428	2465
Refinery Crude Oil Input												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	193	187	189	187	190	189	192	191	192	191	192	190
Average	2167	2019	2112	2094	2184	2173	2295	2295	2204	2082	2024	2073
Standard Deviation	2464	2304	2429	2416	2555	2456	2663	2611	2543	2472	2389	2425
Refinery Finished Leaded Motor Gasoline Gross Production												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	98	96	94	90	88	89	84	87	81	80	74	74
Average	128	116	133	132	142	129	151	147	135	126	119	115
Standard Deviation	164	138	164	150	144	133	163	168	171	158	140	139
Refinery Finished Unleaded Motor Gasoline Gross Production												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	165	163	162	164	164	166	164	165	170	165	166	164
Average	1221	1138	1195	1171	1178	1221	1297	1303	1223	1235	1206	1254
Standard Deviation	1337	1232	1306	1343	1352	1387	1419	1431	1399	1368	1325	1394
Refinery Distillate Fuel Oil Gross Production												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	183	178	186	181	181	182	186	185	185	181	183	179
Average	541	445	454	479	505	508	513	536	495	514	491	523
Standard Deviation	621	467	506	533	560	575	590	600	560	582	570	572
Refinery Residual Fuel Oil Gross Production												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	150	146	144	143	140	140	142	144	143	142	139	144
Average	246	212	217	194	208	207	226	211	199	182	192	225
Standard Deviation	372	325	370	302	305	309	334	330	304	290	309	363
Refinery Finished Leaded Motor Gasoline Stocks												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	107	105	96	96	91	87	86	84	81	80	78	75
Average	54	57	54	46	44	39	42	40	46	45	42	43
Standard Deviation	60	63	60	53	57	43	44	45	54	58	50	55
Bulk Terminal Finished Leaded Motor Gasoline Stocks												
Respondents	329	329	330	330	330	330	329	329	328	328	328	327
Nonzero Respondents	83	76	67	64	60	56	56	52	52	50	50	48
Average	99	88	82	89	92	91	86	93	101	102	97	100
Standard Deviation	187	157	132	153	152	148	143	147	150	161	159	155
Pipeline Finished Leaded Motor Gasoline Stocks												
Respondents	81	81	81	81	81	81	81	81	81	81	81	81
Nonzero Respondents	35	33	33	30	27	25	25	29	27	24	23	24
Average	109	78	81	82	88	83	83	79	84	74	72	78
Standard Deviation	251	119	142	120	126	109	93	116	98	82	75	88
Refinery Finished Unleaded Motor Gasoline Stocks												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	166	166	165	166	168	164	166	166	169	169	168	168
Average	286	314	297	265	247	252	263	244	276	263	269	264
Standard Deviation	313	380	345	279	308	290	321	268	312	307	324	276
Bulk Terminal Finished Unleaded Motor Gasoline Stocks												
Respondents	329	329	330	330	330	330	329	329	328	328	328	327
Nonzero Respondents	155	154	154	154	157	156	155	154	153	153	152	152
Average	518	530	464	496	484	469	486	477	520	498	477	490
Standard Deviation	1200	1179	1018	1135	1115	1079	1150	1107	1215	1203	1122	1103
Pipeline Finished Unleaded Motor Gasoline Stocks												
Respondents	81	81	81	81	81	81	81	81	81	81	81	81
Nonzero Respondents	54	54	54	53	53	53	54	51	52	53	53	53
Average	942	964	957	967	925	956	928	940	968	927	931	978
Standard Deviation	2163	2214	2098	2101	1972	1943	1957	2061	2056	1967	1948	2134
Refinery Distillate Fuel Oil Stocks												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	194	193	193	194	193	195	195	195	197	197	195	194
Average	190	189	171	173	173	178	201	195	206	190	197	202
Standard Deviation	236	230	200	216	193	213	270	251	263	246	251	250
Bulk Terminal Distillate Fuel Oil Stocks												
Respondents	329	329	330	330	330	330	329	329	328	328	328	327
Nonzero Respondents	239	242	244	243	237	238	238	240	242	238	234	233
Average	234	212	176	178	192	208	256	277	292	311	299	290
Standard Deviation	682	604	521	495	517	538	604	684	746	840	804	788

Table B2. Descriptive Statistics for Selected Petroleum Supply Variables (Continued)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pipeline Distillate Fuel Oil Stocks												
Respondents	81	81	81	81	81	81	81	81	81	81	81	81
Nonzero Respondents	54	55	54	55	53	54	55	54	52	53	53	55
Average	463	437	425	404	446	476	453	470	480	467	456	464
Standard Deviation	1180	1032	998	1014	1106	1241	1108	1040	1118	1036	1030	1121
Refinery Residual Fuel Oil Stocks												
Respondents	243	241	239	239	239	240	240	240	244	242	243	243
Nonzero Respondents	160	157	158	158	158	158	160	160	159	161	163	162
Average	127	127	118	131	133	119	119	117	114	117	120	118
Standard Deviation	177	186	174	203	202	172	167	175	165	184	195	186
Bulk Terminal Residual Fuel Oil Stocks												
Respondents	329	329	330	330	330	330	329	329	328	328	328	327
Nonzero Respondents	73	73	75	76	74	72	73	73	72	73	68	69
Average	405	424	363	370	383	385	408	411	433	416	445	425
Standard Deviation	980	1077	816	846	878	882	906	1109	1186	1203	1185	1170
Refinery Crude Oil Stocks												
Respondents	243	241	239	239	239	240	240	240	241	242	243	243
Nonzero Respondents	185	184	184	184	185	186	185	184	185	185	182	184
Average	570	533	601	576	603	599	593	575	552	552	552	514
Standard Deviation	728	649	727	694	726	727	674	668	686	713	696	642
Pipeline/Tank Farm Crude Oil Stocks												
Respondents	163	163	164	164	164	164	164	163	163	163	163	163
Nonzero Respondents	122	122	123	124	125	125	125	125	125	125	126	123
Average	1657	1667	1785	1805	1875	1878	1814	1780	1637	1645	1629	1571
Standard Deviation	3201	3222	3459	3602	3732	3675	3594	3568	3263	3293	3249	3140

regulations governing the amount of lead that could be added. These blending stations were not reporting gasoline production to the EIA until the data system was changed in January 1981.

Quantitative estimates of the magnitude of the difference in EIA's gasoline product supplied data in 1979 and 1980 have been made by the EIA and the American Petroleum Institute (API). Table B3 provides 1979 and 1980 data as published in the *Petroleum Statement, Annual*, as well as EIA and API estimates of "recast" motor gasoline product supplied.

The EIA recast estimates were based upon preliminary monthly information in the *Monthly Petroleum Statement*. The ranges displayed in the EIA column reflect uncertainty in the estimates. Also shown are the FHWA motor gasoline sales statistics for those years.

Table B3. Finished Motor Gasoline Product Supplied (Thousand Barrels per Day)

	EIA Reported	API Recast	EIA Recast	FHWA ^a
1979	7,034	7,302	7,183-7,347	7,258
1980	6,579	6,882	6,806-6,889	6,792

^a FHWA gasoline statistics based on data from Federal Highway Administration, *Estimate of Total Gasoline Use*, Table MF-21A published October 1980 and September 1981. Aviation gasoline (Table MF-24) has been subtracted from FHWA product supplied quantities to make data comparable.

Distillate and Residual Fuel Oil

Distillate and residual fuel oil refinery production statistics through 1980 were adjusted to account for an imbalance between unfinished oil supply and disposition. The reported quantities of refinery inputs of unfinished oils typically exceed the available supply of unfinished oils. It has been assumed that this occurs when distillate and residual fuel oils produced by a refinery are shipped to another refinery, where it is treated as unfinished oil. This oil is then reprocessed rather than used or sold as distillate or residual fuel oil.

For many years (including 1980), the difference between unfinished oil disposition and supply was subtracted from distillate and residual fuel oil production to adjust for this discrepancy. Two-thirds of the difference was applied to distillate fuel oil, and one-third to residual fuel oil.

Beginning in January 1981, this adjustment was discontinued because there was not sufficient empirical evidence to support it. Table B4 presents distillate and residual fuel oil refinery production in 1979 and 1980 as published (adjusted) and on the same basis as 1981 statistics (unadjusted) to permit comparison.

Adjusted distillate and residual fuel oil product supplied volumes differ from the unadjusted volumes by the same amounts as the adjusted and unadjusted production volumes.

Table B4. Distillate and Residual Fuel Oil Production and Product Supplied
(Thousand Barrels per Day)

	Adjusted Refinery Production	Unadjusted Refinery Production	Difference	Unadjusted Product Supplied
Distillate Fuel Oil				
1979	3,152	3,169	16	3,327
1980	2,661	2,764	103	2,969
Residual Fuel Oil				
1979	1,687	1,695	8	2,834
1980	1,580	1,634	54	2,562

Total Petroleum Products

The imbalance between the supply and disposition of unfinished oils and gasoline blending components is included with other products (line 35) in Table 1. These imbalances are reported as negative product supplied in Table 2. Since these changes only involve redistribution of the volumes of finished motor gasoline, distillate and residual fuel oil, gasoline blending components, and unfinished oils, the total volume of petroleum products supplied remains unaffected by them.

Alaskan In Transit Stocks

Stocks of Alaskan crude oil in-transit were included for the first time in January 1981. The major impact of this change is on the reporting of stock change calculations. Using the expanded coverage (new basis), 1980 end-of-year crude oil stocks would have been 488 million barrels for Total and 380 million barrels for Other Primary.

Note 11. 1983 Changes in the Petroleum Supply Reporting System

January 1983 marked the implementation of recent changes in the collection, processing and availability of the Energy Information Administration's (EIA) petroleum supply data. Survey forms and definitions were made consistent; frames for bulk terminals, petroleum product pipelines and crude oil stock holders were updated, and the survey processing system was redesigned and incorporated into the new Petroleum Supply Reporting System (PSRS).

Changes in Data Collection

Changes in data collection can be grouped into five categories. Some were made to improve consistency,

others to classify activity more precisely, and others to combine or eliminate information elements or to reduce the frequency of reporting in recognition of the trade-off between data value and reporting burden. The changes are itemized below.

- Motor gasoline was divided into three standard categories (finished leaded motor gasoline, finished unleaded motor gasoline and motor gasoline blending components).
- Aviation gasoline blending components were added to Form EIA-817.
- Crude oil burned as fuel on leases and by pipelines is reported as a single item on Form EIA-813. Previously it was reported as distillate or residual fuel oil consumption.
- Number 4 Fuel Oil is now included with distillate fuel oil.
- Gasohol was eliminated as a separate category and is now reported as either "finished leaded motor gasoline" or "finished unleaded motor gasoline."
- Waterborne movements of petrochemical feedstocks are now divided into naphtha-less than 400 degrees end-point and other-oils equal to or greater than 400 degrees end-point on Form EIA-817.
- Data aggregation for Petroleum Administration for Defense District (PADD) I was divided into three sub-districts on Forms EIA-812 and 817.
- Detailed categories of Gross Input to Crude Oil Distillation Units were eliminated, and only Total Gross Inputs are collected on Form EIA-810.
- Waterborne movements of crude oil and petroleum products between PADD's, on Form EIA-817, no longer reflect shipping and receiving States.
- Reporting of production and stocks of Number 4 Fuel Oil by sulfur levels were eliminated from Forms EIA-810, 811, 812, and 817.
- Crude oil stocks are collected at PADD levels rather than State levels on Form EIA-813.
- Shipments from natural gas processing plants no longer reflect destination by facility type on Form EIA-816.
- The four categories for unfinished oils were reduced to two on Form EIA-810.

- The five categories for sulfur content of residual fuel oil were reduced to three on Forms EIA-810, 811, and 817.
- Normal Butane and Other Butanes were combined into a single category on Forms EIA-810, 811, and 816.
- Three subcategories of lubricating oils (bright stock, neutral, and other) were combined into a single category on the Form EIA-810.
- Three subcategories of waxes (microcrystalline, crystalline-fully refined, and crystalline-other) were combined into a single category on the Form EIA-810.
- Asphalt and Road Oil were combined into a single category on Forms EIA-810 and 811.
- Plant fuel use and Losses were combined on Form EIA-816.
- Natural Gasoline and Isopentane were combined on Form EIA-816.

Note 12. 1984 Changes in the Petroleum Supply Reporting System

In January 1984, a number of changes in the reporting of natural gas liquids (NGL) were implemented. The modified system reflects supply and disposition of NGL on a component, rather than a product, basis.

From 1979 to 1983, the Energy Information Administration (EIA) collected and reported information on the supply and disposition of nine NGL products. Beginning with January 1984, NGL supply and disposition data were reported for 5 components to be consistent with record keeping practices used by the industry. Table B5 shows the product category under the new and old basis. Four Petroleum Supply Reporting System surveys were modified beginning in January 1984. They were:

EIA-810	"Monthly Refinery Report"
EIA-811	"Monthly Bulk Terminal Report"
EIA-812	"Monthly Product Pipeline Report"
EIA-816	"Monthly Natural Gas Liquids Report"

This change affected stocks reported and stock change calculations. Under the new basis, end-of-year 1983 stocks would have been 108 million barrels for Liquefied Petroleum Gases and 248 million barrels for Other Petroleum Products.

A fifth survey, Form EIA-814, "Monthly Imports Report" (formerly Form ERA-60), was not modified. Therefore, in order to allocate imports and exports of mixed NGL streams to individual component parts, the EIA developed a statistical algorithm.

Table B5. Product Basis vs. Component Basis Reporting

1979-1983 Product Basis	1984 Component Basis				
	Ethane	Propane	Normal Butane	Isobutane	Pentanes Plus
Ethane	•				
Ethane-Propane Mixtures	•	•			
Propane		•			
Butane-Propane Mixtures		•	•		
Butane			•		
Isobutane				•	
Unfractionated Stream	•	•	•	•	•
Natural Gasoline and Isopentane					•
Plant Condensate					•

Imports

The imports algorithm was based on information gathered from the larger importers of NGL, who were asked to provide component analysis of the products they imported during the first 6 months of 1983. The percentages shown in Table B6 are derived from the weighted averages of the data provided by the importers.

Exports

The exports algorithm was based on information gathered from the larger exporters of NGL, who were asked to provide component analysis of the products they exported during 1983. The percentages shown in Table B6 are derived from the weighted averages of the data provided by the exporters. It was necessary to derive percentages by Petroleum Administration for Defense Districts of exportation, due to the wide variation of components included in the mixed streams.

Note 13. 1985 Changes in the Petroleum Supply Reporting System

Beginning in January 1985, inter-Petroleum Administration for Defense (PAD) District pipeline movements of crude oil were included in the crude oil supply balance at

**Table B6. Algorithm for Allocating NGL Imports/Exports
(Percent)**

Product	EIA Component Slate				
	Ethane	Propane	Normal Butane	Isobutane	Pentanes Plus
Import Product					
Natural Gasoline and Isopentane (EIA-814) . . .	—	—	—	—	100
Plant Condensate (EIA-814)	—	—	—	—	100
Ethane (IM-145)	100	—	—	—	—
Propane (IM-145)	—	100	—	—	—
Butane (IM-145)	—	—	65	35	—
Butane-Propane Mixtures (IM-145)	—	40	35	20	5
Ethane-Propane Mixtures (IM-145)	60	40	—	—	—
Export Product					
Ethane (All PAD Districts)	100	—	—	—	—
Propane (All PAD Districts)	—	100	—	—	—
Butane (All PAD Districts)	—	—	100	—	—
Mixed Streams					
PAD Districts I, IV, V	—	40	60	—	—
PAD District II	30	25	15	15	15
PAD District III	—	80	20	—	—

the PAD District level but did not affect National level statistics. As a result of including these movements, *Net Receipts* of crude oil and *Unaccounted for Crude Oil* at the PAD District level changed significantly. Also affected were crude oil imports and unfinished oil imports at the PAD District level which are provided by *PAD District of Entry* (Tables 4-8) and by *PAD District of Processing* (Table 14).

The tables in the *Petroleum Supply Annual* that were changed due to the inclusion of inter-PAD District pipeline movements of crude oil are listed below:

- Tables 4 through 8, "PAD Districts I to V, Supply and Disposition of Crude Oil and Petroleum Products."

- Effective January 1985, crude oil imports and unfinished oil imports in Tables 4 through 8 were reported at the *PAD District of Entry* rather than at the *PAD District of Processing*. *Net Receipts* now include movements by pipeline as well as by tanker and barge.

- Table 20, "Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts."

- The crude oil line includes movements by pipeline as well as by tanker and barge.

- Table 21, "Movements of Crude Oil and Petroleum Products by Pipeline Between PAD Districts."

- A line was added to report crude oil movements.

- Table 23, "Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts."

- The crude oil line includes movements by pipeline as well as by tanker and barge.

Note 14. 1986 Changes in the Petroleum Supply Reporting System

Beginning in January 1986, several changes to the Petroleum Supply Reporting System (PSRS) went into effect. These changes affected the frame of operators of petroleum facilities required to complete the monthly surveys in the PSRS and resulted in some changes to the tables presented in the *Petroleum Supply Monthly* and were subsequently published in the *Petroleum Supply Annual* (PSA).

Changes in Survey Frames

As a result of frames maintenance activities, 39 respondents were added to the monthly survey frames: 2 motor gasoline blenders, 30 bulk terminal operators, 3 pipeline operators, 3 crude oil stock holders, and 1 tanker and barge operator. Table B7 shows the impact of the data reported by the new respondents on published data for production and stocks of major petroleum products.

Table B7. Impact of New Respondents to December 1985 PSM Data

Product	Refinery Production (thousand barrels per day)		Stocks ^a (thousand barrels)	
	Reported by New Respondents	Published U.S. Total	Reported by New Respondents	Published U.S. Total
Leaded Gasoline	1.3	2,326	224	81,379
Unleaded Gasoline	0.6	4,323	276	108,422
Distillate Fuel Oil	0	3,174	1,217	143,911
Residual Fuel Oil	0	1,055	1,747	50,671
NGLs & LRGs	0	393	409	80,898
Other Products	0	3,302	1,413	239,158
Crude Oil (excl. SPR)	—	—	2,314	318,695

^a Stocks as of December 31, 1985.

Also, beginning in January 1986, a major petroleum company consolidated production and stocks reporting for some of its facilities. Data previously reported separately on Form EIA-811, "Monthly Bulk Terminal Report," and on Form EIA-816, "Monthly Natural Gas Liquids Report" for two facilities were combined with data reported for two refineries on Form EIA-810, "Monthly Refinery Report." The primary impact of this reporting change is on Table 18, "Stocks of Crude Oil and Petroleum Products by PAD District," which showed a decrease in natural gas liquids (NGL) stocks at bulk terminals and natural gas processing plants, and an increase in NGL stocks at refineries.

Changes in Data Collection

- The unit of measure used on Form EIA-814, "Monthly Imports Report," has been changed from barrels to thousands of barrels.
- Unfinished oil imports data, previously reported as one product on the Form EIA-814, are now reported separately under four classifications. These classifications are:
 - Naphthas and lighter
 - Kerosene and light gas oils
 - Heavy gas oils
 - Residuum
- The number of categories for reporting natural gas liquids and liquefied petroleum gases data on Form EIA-814 was reduced from 19 to 5 by eliminating the requirement to separately identify categories for further processing, petrochemical use, and fuel use.
- The requirements to report the type of processing facility and the applicable section of the oil import regulations were eliminated for the Form EIA-814.

- The requirement to report data for imports of crude oil, unfinished oils, and finished products on separate schedules of the Form EIA-814 was eliminated.
- The requirement to report two end-use categories, petrochemical use and other use, for still gas and liquefied refinery gases, was eliminated on Form EIA-810, "Monthly Refinery Report."
- Form EIA-815, "Monthly Shipments from Puerto Rico to the United States Report," was discontinued. The data previously reported on this form are now reported on Form-814.

Changes in Publication Tables

Several changes were also made to tables in the *PSA* either as a direct result of changes in reporting requirements or to improve the usefulness of the publication. These changes were:

- Table 11, "Refinery Input of Crude Oil and Petroleum Products by PAD District."
 - Alaskan crude oil receipts were shown separately.
- Table 12, "Refinery Production of Petroleum Products by PAD District."
 - The breakout between "petrochemical feedstock use" and "other use" were no longer shown separately for still gas or for liquefied refinery gases.
- Table 14, "Imports of Crude Oil and Petroleum Products by PAD District."

- Imports of unfinished oils were separated into four categories: naphthas and lighter, kerosene and light gas oils, heavy gas oils, and residuum.
- Table 15, "Imports of Crude Oil and Petroleum Products by Source."
 - Countries formerly included in the categories "Other Western Hemisphere" and "Other Eastern Hemisphere" were shown individually.
- Table 18, "Stocks of Crude Oil and Petroleum Products by PAD District."
 - The breakout between "petrochemical feedstock use" and "other use" for each liquefied petroleum gas was eliminated.

Note 15. 1987 Changes in the Petroleum Supply Reporting System

Several changes to the Petroleum Supply Reporting System went into effect at the beginning of January 1987. These changes were made as part of the Energy Information Administration's (EIA's) continuing effort to provide pertinent, timely, and consistent energy information.

Changes in Data Collection

Fresh feed input to catalytic cracking units, hydrocracking units, and cokers were added to the Form EIA-810, "Monthly Refinery Report."

Changes in Publication Tables

- The "Appalachian No. 2" Refining District was combined with the "Indiana, Illinois, Kentucky," Refining District. This affected *Petroleum Supply Annual* (PSA) Tables 10 through 13, 18, 24, and 25.
- Fresh feed inputs to catalytic cracking units, hydrocracking units, and cokers were added to Table 11, "Refinery Input of Crude Oil and Petroleum Products by PAD District."

Clarification

In 1986, several refineries and terminals in the United States applied for Foreign Trade Zone (FTZ) status and applications from three refineries were approved. Consequently, during 1986, some refineries with FTZ status were treated as if they were within the United States while the Hawaiian FTZ was considered outside.

Effective with the January 1987 data, all FTZ facilities located within the 50 United States are considered domestic entities and are included in PSA statistics. The principal differences in the PSA data series as a result of adding the Hawaiian FTZ was an approximate 1 percent increase in crude imports and a 3 percent decrease in product imports.

Note 16. 1989 Changes in the Petroleum Supply Reporting System

Several changes to the Petroleum Supply Reporting System (PSRS) went into effect at the beginning of January 1989. These changes were made to reduce respondent burden, to fulfill user requests for additional data, and to improve accuracy and consistency in reporting. To reflect these changes and to improve the usefulness of the *Petroleum Supply Monthly* (PSM) publication, the following changes were made in January 1989 and are subsequently reflected in the *Petroleum Supply Annual* (PSA) publication:

- Data on inputs and production of naphthenic and paraffinic lubricants were added to the Form EIA-810, "Monthly Refinery Report."
- Separate lines for the collection of inputs and production of olefins (ethylene, propylene, and butylene) were added to Form EIA-810, "Monthly Refinery Report."
- The collection of data on the movement of Liquefied Petroleum Gases (LPGs) and Liquefied Refinery Gases (LRGs) on a component basis were added to the Forms EIA-812, "Monthly Product Pipeline Report," and the EIA-817, "Monthly Tanker and Barge Movement Report."
- Bonded imports of jet fuel and fuel oils and imports of LPGs previously published from data provided by the U.S. Bureau of the Census were discontinued. Data are now published from the data reported on the Form EIA-814, "Monthly Imports Report."
- Exports of butane/propane and ethane/propane mixtures were split in a ratio of 60 percent for the butane and ethane portions and 40 percent for the propane portion.
- The reporting of products other than Natural Gas Liquids (NGLs) by natural gas processing plants was eliminated on the Form EIA-816, "Monthly Natural Gas Liquids Report."

- Fractionators were required to report only end-of-month stocks of NGLs on the Form EIA-816, "Monthly Natural Gas Liquids Report."

Changes in Natural Gas Liquids and Crude Oil Statistics

Beginning with the January 1989 issue of the *PSM*, adjustments were made to refinery inputs and product supplied of NGLs and refinery inputs of crude oil to account for refiner misreporting. Substantial volumes of NGLs are produced at natural gas processing plants in Alaska and injected into the crude oil moving in the Trans Alaska Pipeline System (TAPS). Refiners receiving any crude oil commingled with NGLs are instructed to report the NGL portion of that stream separately from the crude oil portion. This has not been done for Alaskan crude oil because refiners are unable to identify these volumes for accounting purposes. As a result, the NGL production in Alaska has been credited directly toward product supplied and also toward product supplied from refinery production when the refiner processes the crude oil-NGL mixture. In addition, the reporting of the commingled stream as crude oil by the refiner has overstated crude oil inputs and resulted in an increase in unaccounted for crude oil equal to the volume of NGL in the crude oil.

To offset this reporting error, an adjustment was made to refinery input in all Petroleum Administration for Defense (PAD) Districts receiving Alaskan crude oil. The adjustment reduces the crude oil inputs and increases the NGL inputs by an equal amount. Each PAD District adjustment is a portion of the known Alaskan NGL production that is proportional to the PAD District's share of Alaskan crude oil received at all refineries in the United States. The greatest impact occurs in PAD District V for butane and pentanes plus.

The reporting problem began in 1987 and has grown as injections of NGLs into the TAPS have increased. Data for

1988 was revised to account for the adjustment in the *PSA*. Revisions for 1987 data are not planned.

Changes in Publication Tables

- Year-to-Date tables on Supply and Disposition by PAD District (Tables 7, 9, 11, 13, and 15) were added.
- "Stock Withdrawal" was renamed "Stock Change" and was moved from Supply to Disposition in Tables 2 through 15. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.
- A jet fuel total line was added to Tables 2-15, 19, 20, 23, 24, 43-46.
- PAD District Supply and Disposition tables (Tables 6 through 15) now display liquefied petroleum gases on a component basis.
- Tables showing net imports by country for the current month and year-to-date (Tables 39 and 40) were added.
- Table numbers were changed as a result of data additions and table reorganization. Table B8 is provided to show the new to old table numbers for the detailed statistics tables.
- Table 17, "Natural Gas Plant Net Production and Stocks of Petroleum Products by PAD and Refining District."
 - Stocks at natural gas processing plants by Refining District previously published on Table 24 was included with net production of petroleum products at natural gas plants.
 - The reporting of products other than natural gas liquids by natural gas processing plants was eliminated.

Table B8. Conversion Table for 1989 PSM

Table Numbers											
Old	New	Old	New	Old	New	Old	New	Old	New	New	New
1	1	NA	9	12, 24	17	18, 33	25	19	33	24, 31	41
2	2	8	10	13	18	18, 33	26	19	34	25	42
3	3	NA	11	14, 30	19	18, 33	27	20	35	26	43
4	4	9	12	24, 31	20	18, 33	28	21	36	27	44
5	5	NA	13	15	21	18, 33	29	22	37	28, 32	45
6	6	10	14	34	22	19	30	23	38	29	46
NA	7	NA	15	16	23	19	31	NA	39		
7	8	11	16	17	24	19	32	NA	40		

NA = Not Applicable

- Table 19, "Net Refinery Production of Finished Petroleum Products by PAD and Refining District."

- Net production of olefins (ethylene, propylene, and butylene) was added.

- Net production of naphthenic and paraffinic lubricants was added.

- Net production of residual fuel oil by percent sulfur, previously published as Table 30, was added.

- Table 20, "Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining District."

- Stocks at refineries by Refining District were added from Table 24.

- Stocks of residual fuel oil by percent sulfur content, previously published as Table 31, were added.

- Tables 25 through 34, "Imports of Crude Oil and Petroleum Products by Country of Origin."

- Data previously included in the "Other Products" category were displayed separately for naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, lubricants, and asphalt and road oil.

- Sulfur content categories for residual fuel oil, previously published as Table 33, were added.

- Tables 37 and 38, "Exports of Crude Oil and Petroleum Products by Destination."

- Data for exports by destination previously included in the Other Products category were displayed separately for pentanes plus, kerosene, naphthas for petrochemical feedstock use, and other oils for petrochemical feedstock use.

- Table 41, "Stocks of Crude Oil and Petroleum Products by PAD District."

- Refining District data were eliminated. Refinery stocks and natural gas processing plant stocks by Refining District were added to Tables 17 and 20, respectively.

- Sulfur content categories for residual fuel oil, previously published as Table 31, were added.

Note 17. 1990 Changes in the Petroleum Supply Reporting System

Beginning with the May 1990 issue of the *Petroleum Supply Monthly* (PSM), stocks of propane/propylene were added to Table 42, "Refinery, Bulk Terminal, and Natural Gas Plant Stocks of Selected Petroleum Products by State." This change is also reflected in the corresponding table in the *Petroleum Supply Annual* (PSA).

Beginning with the 1991 March issue of the PSM, several changes were made to the Petroleum Supply Reporting System to provide additional data and to improve the usefulness of the publication. Although these changes were made in 1991, these changes have been incorporated into the 1990 PSA to provide consistent energy information.

Changes in Publication Tables

Summary Statistics Tables

- A new table (Table S7) has been added to display jet fuel supply and disposition.
- Table S8, "Other Petroleum Products Supply and Disposition" has been redesignated as Table S9. Jet fuel data are no longer included. Historical data have been revised to exclude jet fuel.
- Table S3, "Crude Oil and Petroleum Product Imports" has been expanded to display all Organization of Petroleum Exporting Countries (OPEC) and additional Non-OPEC countries. A separate column for crude oil imports has also been added for each country.
- Time periods have been included in table titles.

Figures

- Time periods have been included in figure titles.
- Sources have been provided for each figure.
- Bar graphs used to display end-of-month stocks have been replaced with line graphs.

Sources

The sources and explanatory notes for this section have been updated and are now located at the end of the Summary Statistics section.

Detailed Statistics Tables

- Table 1, "U.S. Petroleum Balance"

- A line has been added to display jet fuel as a separate category for Total Products Supplied and Total Stocks (Lines 34 and 44, respectively).
- Imports of Crude Oil and Petroleum Products by PAD District

- Residual fuel oil sulfur categories have been added.

- Imports of Crude Oil and Petroleum Products by Country of Origin

- Residual fuel oil sulfur categories by country of origin have been eliminated. These categories are now reported on a PAD District basis.
- Separate daily average columns have been added for crude oil and petroleum products.

Appendix C

1989 Revised Crude Oil Production



Surface aerators are used at U.S. petroleum refineries to help prevent water pollution. These aerators speed up the oxidation process by beating air into water.

Appendix C

Table C1. Revised^a Crude Oil Production by PAD District and State, 1989
(Thousand Barrels)

PAD District and State	January	February	March	April	May	June	July
PAD District I	1,118	980	1,104	1,050	1,138	1,076	1,022
Florida	650	558	612	594	638	588	598
New York	44	36	45	41	50	47	41
Pennsylvania	216	205	238	221	256	248	200
Virginia	3	2	2	2	2	2	2
West Virginia	205	178	206	192	192	191	181
PAD District II	25,108	21,009	24,647	23,677	24,162	23,130	23,441
Illinois	1,861	1,505	1,752	1,638	1,768	1,706	1,749
Indiana	299	252	309	263	297	286	278
Kansas	4,876	4,104	4,946	4,715	4,849	4,641	4,636
Kentucky	467	375	480	623	468	451	439
Michigan	1,967	1,718	1,867	1,786	1,847	1,822	1,805
Missouri	11	12	9	10	14	10	12
Nebraska	561	484	533	532	532	536	538
North Dakota	3,178	2,827	3,149	2,989	3,089	2,943	3,133
Ohio	984	805	954	859	912	868	790
Oklahoma	10,718	8,761	10,462	10,089	10,201	9,691	9,879
South Dakota	136	123	135	127	139	131	138
Tennessee	49	42	52	46	46	44	44
PAD District III	111,306	98,332	109,115	105,685	108,174	103,308	105,768
Alabama	1,743	1,553	1,746	1,696	1,731	1,668	1,767
Arkansas	1,024	903	998	962	1,001	949	962
Louisiana	13,695	11,840	13,212	12,927	13,255	12,747	13,275
Mississippi	2,412	2,117	2,382	2,359	2,416	2,435	2,437
New Mexico	6,132	5,339	5,977	5,681	5,918	5,585	5,765
Texas	60,712	53,563	59,790	57,734	59,072	56,362	57,998
Federal Offshore PADD III	25,588	23,017	25,008	24,326	24,781	23,563	23,564
PAD District IV	16,745	14,618	16,477	15,832	16,388	15,588	16,028
Colorado	2,682	2,398	2,713	2,654	2,699	2,535	2,579
Montana	1,849	1,598	1,814	1,770	1,830	1,764	1,776
Utah	2,528	2,237	2,486	2,309	2,495	2,068	2,437
Wyoming	9,686	8,384	9,464	9,098	9,365	9,171	9,236
PAD District V	92,035	83,409	83,714	87,175	92,748	86,122	84,832
Alaska	60,692	54,939	52,265	56,700	61,174	55,828	53,484
South Alaska	1,346	1,200	1,376	1,296	1,354	1,207	1,346
North Slope	59,347	53,739	50,889	55,404	59,820	54,621	52,138
Arizona	9	8	10	11	13	13	13
California	28,441	25,743	28,423	27,503	28,350	27,269	28,152
Nevada	271	242	266	253	270	257	269
Federal Offshore PADD V	2,622	2,477	2,750	2,707	2,942	2,755	2,913
U.S. Total^b	246,312	218,347	235,056	233,419	242,610	229,223	231,091
Daily Average	7,946	7,798	7,582	7,781	7,826	7,641	7,455

This table contains updates on 1989 crude oil production statistics published in the *Petroleum Supply Annual* (PSA), 1989.

Statistics on crude oil production for States and for Federal offshore areas are reported to the Energy Information Administration (EIA) by State government agencies and by the Minerals Management Service, U.S. Department of the Interior. These data are updated periodically by the reporting agencies and are received by the EIA on an ongoing basis. At the time of publication of the 1989 PSA, the EIA had not received complete and/or updated statistics on crude oil production for several States. This table is provided to inform the user of updated monthly and annual crude oil production statistics for 1989, and are not subject to further revision by the EIA.

Table C1. Revised^a Crude Oil Production by PAD District and State, 1989 (Continued)
(Thousand Barrels)

PAD District and State	August	September	October	November	December	Total	Daily Average
PAD District I	1,092	1,076	1,132	1,031	933	12,751	35
Florida	608	626	665	586	566	7,289	20
New York	45	40	38	38	33	496	1
Pennsylvania	247	224	236	222	185	2,702	7
Virginia	2	1	2	1	2	21	(s)
West Virginia	191	184	192	184	147	2,243	6
PAD District II	23,655	22,620	23,570	22,986	21,595	279,598	766
Illinois	1,782	1,702	1,757	1,708	1,453	20,380	56
Indiana	284	260	285	271	227	3,310	9
Kansas	4,780	4,483	4,642	4,525	4,288	55,484	152
Kentucky	458	413	455	422	363	5,414	15
Michigan	1,838	1,734	1,814	1,685	1,687	21,566	59
Missouri	12	10	11	12	10	136	(s)
Nebraska	522	505	515	484	488	6,232	17
North Dakota	3,098	2,980	3,159	3,084	3,115	36,744	101
Ohio	870	808	830	810	724	10,219	28
Oklahoma	9,834	9,551	9,918	9,805	9,062	117,971	323
South Dakota	135	131	138	137	142	1,613	4
Tennessee	42	43	46	42	36	532	1
PAD District III	104,576	101,319	101,802	101,290	99,223	1,249,899	3,424
Alabama	1,750	1,637	1,495	1,472	1,555	19,813	54
Arkansas	993	928	893	898	856	11,368	31
Louisiana ^b	12,764	12,389	12,506	12,595	11,467	152,671	418
Mississippi	2,473	2,346	2,454	2,325	2,306	28,462	78
New Mexico	5,737	5,534	5,793	5,642	5,611	68,713	188
Texas ^b	57,830	55,689	57,509	56,046	55,847	688,154	1,885
Federal Offshore PADD III	23,029	22,796	21,152	22,312	21,581	280,719	769
PAD District IV	15,550	15,486	15,966	15,211	15,751	189,640	520
Colorado	2,590	2,456	2,613	2,510	2,622	31,102	85
Montana	1,760	1,705	1,750	1,674	1,690	20,979	57
Utah	2,433	2,365	2,425	2,207	2,425	28,416	78
Wyoming	8,767	8,961	9,177	8,820	9,013	109,143	299
PAD District V	89,224	86,306	89,059	87,234	89,842	1,051,700	2,881
Alaska ^b	57,963	56,260	58,198	57,449	59,027	683,980	1,874
South Alaska	1,306	1,290	1,154	1,232	1,263	15,369	42
North Slope	56,657	54,971	57,044	56,218	57,764	668,611	1,832
Arizona	13	11	13	12	11	138	(s)
California ^b	28,121	26,924	27,829	26,867	27,661	331,281	908
Nevada	285	290	291	265	257	3,218	9
Federal Offshore PADD V	2,842	2,820	2,728	2,641	2,886	32,083	91
U.S. Total^b	234,098	226,807	231,529	227,752	227,344	2,783,588	7,626
Daily Average	7,552	7,560	7,469	7,592	7,334	7,626	-

^a Data are based upon revisions received as of April 1991.

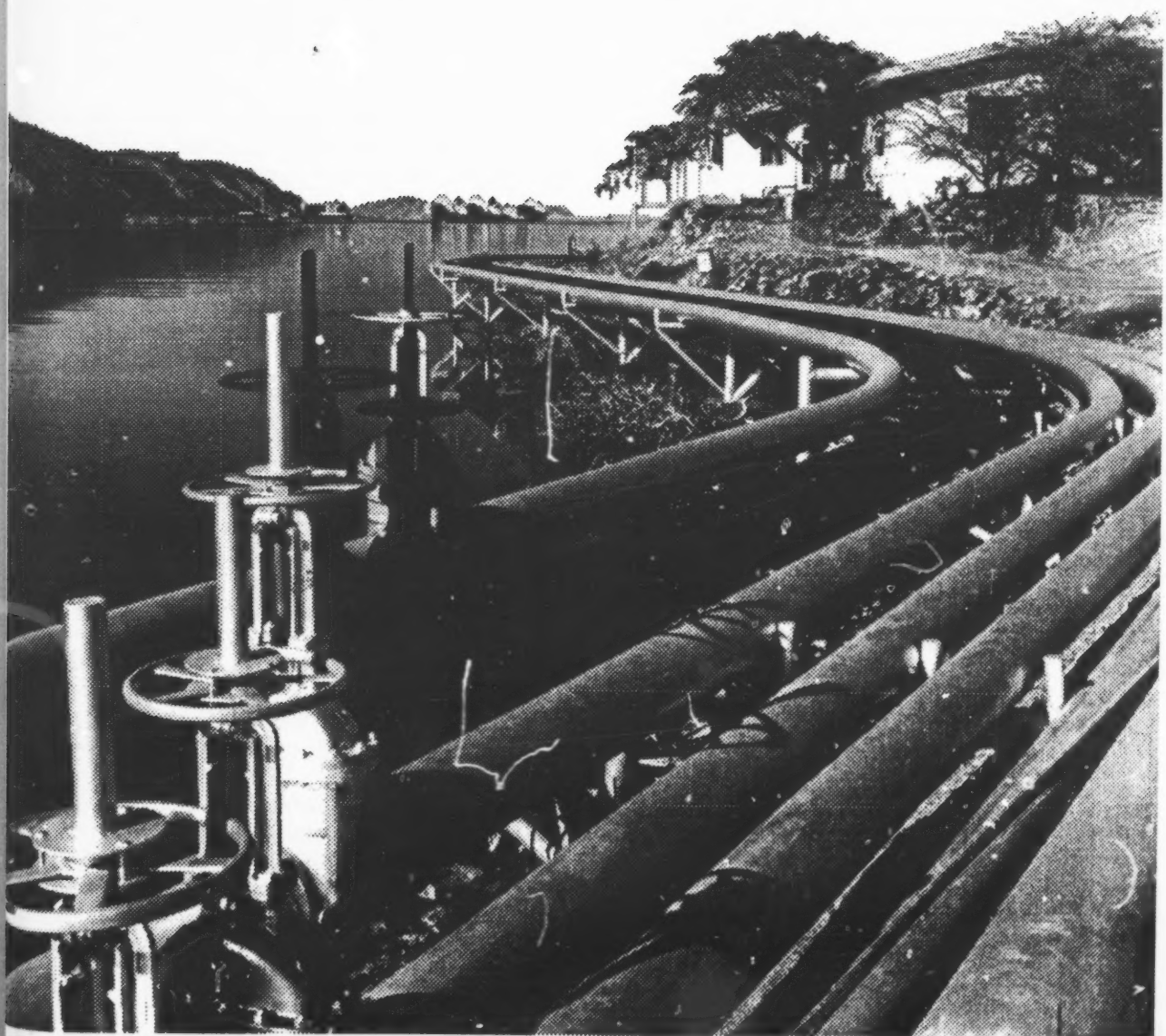
^b Includes the following offshore production (thousand barrels): Alaska: State - 49,359; California: State - 25,397; Louisiana: State - 22,669; Texas: State - 1,618; U.S. Total, including Federal Offshore - 412,845.

(s) = Less than 500 barrels or less than 500 barrels per day.

Note: • Production data are revised from those published in the *Petroleum Supply Annual 1989* for the following States: Arkansas, California, Colorado, Federal Offshore PAD District III, Federal Offshore PAD District V, Illinois, Louisiana, Michigan, Mississippi, Montana, New York, Ohio, Oklahoma, Texas, and Wyoming. • Annual crude oil production for Michigan, New York, Ohio, and Pennsylvania was prorated by month based on first purchaser monthly crude oil volumes collected on Form EIA-182, "Domestic Crude Oil First Purchase Report." • Totals may not equal sum of components due to independent rounding.

Source: State Conservation Agencies and the U.S. Minerals Management Service.

Glossary



Pipelines carry crude oil and petroleum products between refineries and ports.

Definitions of Petroleum Products and Other Terms

Alcohol. The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; $\text{CH}_3\text{-(CH}_2\text{)}_n\text{-OH}$ (e.g., methanol, ethanol, and tertiary butyl alcohol (TBA)).

Alkylate. The product of an alkylation reaction. It usually refers to the high octane product from alkylation units. This alkylate is used in blending high octane gasoline.

Alkylation. A refining process for chemically combining isobutane with olefin hydrocarbons (e.g., propylene, butylene) through the control of temperature and pressure in the presence of an acid catalyst, usually sulfuric acid or hydrofluoric acid. The product alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the antiknock value of the fuel.

API Gravity. An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API; it is calculated as follows:

$$\text{Degrees API} = \frac{141.5}{\text{sp.gr.}_{60^\circ\text{F}}/60^\circ\text{F}} - 131.5$$

Aromatics. Hydrocarbons characterized by unsaturated ring structures of carbon atoms. Commercial petroleum aromatics are benzene, toluene, and xylene (BTX).

Asphalt. A dark-brown-to-black cement-like material containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. The conversion factor for asphalt is 5.5 barrels per short ton.

ASTM. The acronym for the American Society for Testing and Materials.

Atmospheric Crude Oil Distillation. The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 600° to 750° F (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

Aviation Gasoline (Finished). All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910 and Military Specification MIL-G-5572. Excludes blending components which will be used in blending or compounding into finished aviation gasoline.

Aviation Gasoline Blending Components. Naphthas and aromatics which will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and alcohol.

Barrel. A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. This measure is used in most statistical reports. Factors for converting petroleum coke, asphalt, still gas and wax to barrels are given in the definitions of these products.

Barrels Per Calendar Day. The maximum number of barrels of input that can be processed during a 24-hour period after making allowances for the following limitations:

the capability of downstream facilities to absorb the output of crude oil processing facilities of a given refinery. No reduction is made when a planned distribution of intermediate streams through other than downstream facilities is part of a refinery's normal operation;

the types and grades of inputs to be processed;

the types and grades of products expected to be manufactured;

the environmental constraints associated with refinery operations;

the reduction of capacity for scheduled downtime such as routine inspection, mechanical problems, maintenance, repairs, and turnaround; and

the reduction of capacity for unscheduled downtime such as mechanical problems, repairs, and slowdowns.

Barrels Per Stream Day. The amount a unit can process running at full capacity under optimal crude oil and product slate conditions.

Benzene (C₆H₆). One of the aromatic compounds, commonly referred to as BTXs, and a basic building block of the petrochemical industry. It is primarily manufactured through catalytic reforming processes, steel milling coking production and olefin operations. It is found in motor gasoline and is used as a solvent, and in organic synthesis.

Blending Plant. A facility which has no refining capability but is capable of producing finished motor gasoline through mechanical blending.

Bonded Petroleum Imports. Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are: (1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade; or (2) withdrawn from storage with duty paid for domestic use.

BTX. The acronym for the commercial petroleum aromatics benzene, toluene, and xylene. See individual categories for definitions.

Bulk Terminal. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline.

Butane (C₄H₁₀). A normally gaseous straight-chain or branch-chain hydrocarbon extracted from natural gas or refinery gas streams. It includes isobutane and normal butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

Isobutane (C₄H₁₀). A normally gaseous branch-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9° F. It is extracted from natural gas or refinery gas streams.

Normal Butane (C₄H₁₀). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 31.1° F. It is extracted from natural gas or refinery gas streams.

Butylene (C₄H₈). An olefinic hydrocarbon recovered from refinery processes.

Catalytic Cracking. The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Fresh Feeds. Crude oil or petroleum distillates which are being fed to processing units for the first time.

Recycled Feeds. Feeds that are continuously fed back for additional processing.

Catalytic Hydrocracking. A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high-octane gasoline, reformer charge stock, jet fuel and/or high grade fuel oil. The process uses one or more catalysts, depending upon product output, and can handle high sulfur feedstocks without prior desulfurization.

Catalytic Hydrotreating. A refining process for treating petroleum fractions from atmospheric or vacuum distillation units (e.g., naphthas, middle distillates, reformer feeds, residual fuel oil, and heavy gas oil) and other petroleum (e.g., cat cracked naphtha, coker naphtha, gas oil, etc.) in the presence of catalysts and substantial quantities of hydrogen. Hydrotreating includes desulfurization, removal of substances (e.g., nitrogen compounds) that deactivate catalysts, conversion of olefins to paraffins to reduce gum formation in gasoline, and other processes to upgrade the quality of the fractions.

Catalytic Reforming. A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules, thereby converting paraffinic and naphthenic type hydrocarbons (e.g., low-octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline. Catalytic reforming is reported in two categories. They are:

Low Pressure. A processing unit operating at less than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

High Pressure. A processing unit operating at either equal to or greater than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

Charge Capacity. The input (feed) capacity of the refinery processing facilities.

Coal. A generic term applied to carbonaceous rocks that were formed by the partial or complete decomposition of vegetation. These stratified carbonaceous rocks are either solid or brittle and are highly combustible. Includes lignite, bituminous coal, and anthracite which conform to ASTM Specification D388.

Crude Oil (Including Lease Condensate). A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure

after passing through surface-separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable. Crude oil is considered as either domestic or foreign, according to the following:

Domestic. Crude oil produced in the United States or from its "outer continental shelf" as defined in 43 USC 1331.

Foreign. Crude oil produced outside the United States. Imported Athabasca hydrocarbons are included.

Crude Oil, Refinery Receipts. Receipts of domestic and foreign crude oil at a refinery. Includes all crude oil in transit except crude oil in transit by pipeline. Foreign crude oil is reported as a receipt only after entry through customs. Crude oil of foreign origin held in bonded storage is excluded.

Crude Oil Losses. Represents the volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc. as opposed to refinery processing losses.

Crude Oil Production. The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water (BS&W).

Crude Oil Qualities. Refers to two properties of crude oil, the sulfur content and API gravity, which affect processing complexity and product characteristics.

Crude Oil Used Directly. Represents the amount of crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Delayed Coking. A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Disposition. The components of petroleum disposition are stock change, crude oil losses, refinery inputs, exports, and products supplied for domestic consumption.

Distillate Fuel Oil. A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on-and-off-highway diesel engine fuel including railroad engine fuel and fuel for agricultural machinery, and electric power generation. Included are products known as No. 1, No. 2, and No. 4 fuel oils; No. 1, No. 2, and No. 4 diesel fuels.

No. 1 Fuel Oil. A light distillate fuel oil intended for use in vaporizing pot-type burners. ASTM Specification D396 specifies for this grade maximum distillation temperatures of 400° F at the 10-percent recovery point and 550° F at the 90-percent point, and kinematic viscosities between 1.4 and 2.2 centistokes at 100° F.

No. 2 Fuel Oil. A distillate fuel oil for use in atomizing-type burners for domestic heating or for moderate capacity commercial-industrial burner units. ASTM Specification D396 designates minimum and maximum distillation temperatures at the 90-percent recovery point of 540° and 640° F, and kinematic viscosities between 2.0 and 3.6 centistokes at 100° F.

No. 1 and No. 2 Diesel Fuel Oils. Distillate fuel oils used in compression-ignition engines, as designated in the ASTM Specification D975:

No. 1-D. A volatile distillate fuel oil with a maximum distillation temperature of 550° F at the 90-percent recovery point for use in high-speed diesel engines generally operated under variations in speed and load. Includes type C-B diesel fuel used for city buses and similar operations. Properties are defined in ASTM Specification D975.

No. 2-D. A gas oil type distillate of lower volatility with minimum and maximum distillation temperatures at the 90-percent recovery point of 540° and 640° F for use in high-speed diesel engines generally operated under uniform speed and load conditions. Includes Type R-R diesel fuel used for railroad locomotive engines, and Type T-T for diesel-engine trucks. Properties are defined in ASTM Specification D975.

No. 4 Fuel Oil. A fuel oil for commercial burner installations not equipped with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D396 or Federal Specification VV-F-815C; with minimum and maximum kinematic viscosities between 5.8 and 26.4 centistokes at 100° F.

Also included is No. 4-D, a fuel oil for low and medium-speed diesel engines that conforms to ASTM Specification D975.

Electricity (Purchased). Electricity purchased for refinery operations that is not produced within the refinery complex.

Ending Stocks. Primary stocks of crude oil and petroleum products held in storage as of 12 midnight on the last day of the month. Primary stocks include crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary Stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

Ethane (C₂H₆). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -127.48° F. It is extracted from natural gas and refinery gas streams.

Ether. A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Ethylene (C₂H₄). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes.

Exports. Shipments of goods from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Field Production. Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, and new supply of other hydrocarbons and alcohol.

Flexicoking. A thermal cracking process which converts heavy hydrocarbons such as crude oil, tar sands bitumen, and distillation residues into light hydrocarbons. Feedstocks can be any pumpable hydrocarbons including those containing high concentrations of sulfur and metals.

Fluid Coking. A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fresh Feed Input. Represents input of material (crude oil, unfinished oils, natural gas liquids, other hydrocarbons and alcohol or finished products) to processing units

at a refinery that is being processed (input) into a particular unit for the first time.

Examples:

- (1) Unfinished oils coming out of a crude oil distillation unit which are input into a catalytic cracking unit are considered fresh feed to the catalytic cracking unit.
- (2) Unfinished oils coming out of a catalytic cracking unit being looped back into the same catalytic cracking unit to be reprocessed are not considered fresh feed.

Fuels Solvent Deasphalting. A refining process for removing asphalt compounds from petroleum fractions, such as reduced crude oil. The recovered stream from this process is used to produce fuel products.

Gas Oil. A liquid petroleum distillate having a viscosity intermediate between that of kerosene and lubricating oil. It derives its name from having originally been used in the manufacture of illuminating gas. It is now used to produce distillate fuel oils and gasoline.

Gasohol. A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol), limited to 10 percent volume of alcohol. Gasohol is included in finished leaded and unleaded motor gasoline.

Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation or motor gasoline (e.g., straight-run gasoline, alkylate, and reformat). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus.

Gross Input to Atmospheric Crude Oil Distillation Units. Total input to atmospheric crude oil distillation units. Includes all crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases, slop oils, and other liquid hydrocarbons (such as shale oil, tar sands oils, gilsonite, etc.).

Heavy Gas Oil. Petroleum distillates with an approximate boiling range from 651° to 1000° F.

Hydrogen. The lightest of all gases, occurring chiefly in combination with oxygen in water; also in acids, bases, alcohols, petroleum, and other hydrocarbons.

Idle Capacity. The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

Imported Crude Oil Burned As Fuel. The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from tar sand oil, gilsonite, and shale oil.

Imports. Receipts of goods into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Isobutane. See Butane.

Isohexane (C₆H₁₄). A saturated branch-chain hydrocarbon. It is a colorless liquid that boils at a temperature of 156.2° F.

Isomerization. A refining process which alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert normal butane into isobutane (C₄), an alkylation process feedstock, and normal pentane and hexane into isopentane (C₅) and isohexane (C₆), high-octane gasoline components.

Isopentane. See Natural Gasoline and Isopentane.

Kerosene. A petroleum distillate that has a maximum distillation temperature of 401° F at the 10-percent recovery point, a final boiling point of 572° F, and a minimum flash point of 100° F. Included are the two grades designated in ASTM D3699: No. 1-K and No. 2-K, and all grades of kerosene called range or stove oil. Kerosene is used in space heaters, cook stoves, and water heaters and is suitable for use as an illuminant when burned in wick lamps.

Kerosene-Type Jet Fuel. A quality kerosene product with a maximum distillation temperature of 400° F at the 10-percent recovery point and a final maximum boiling point of 572° F. The fuel is designated in ASTM Specification D1655 and Military Specification MIL-T-5624L (Grades JP-5 and JP-8). A relatively low-freezing point distillate of the kerosene type used primarily for commercial turbojet and turboprop aircraft engines.

Lease Condensate. A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

Light Gas Oils. Liquid petroleum distillates heavier than naphtha, with an approximate boiling range from 401° to 650° F.

Liquefied Petroleum Gases (LPG). Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids.

Liquefied Refinery Gases (LRG). Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration, they are retained in the liquid state. The reported categories are ethane/ethylene, propane/propylene, normal butane butylene, and isobutane. Excludes still gas.

Lubricants. A substance used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products, or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Do not include byproducts of lubricating oil refining such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. "Lubricants" includes all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Reporting categories include:

Paraffinic. Includes all grades of bright stock and neutrals with a Viscosity Index > 75.

Naphthenic. Includes all lubricating oil base stocks with a Viscosity Index < 75.

Note: The criterion for categorizing the lubricants is based solely on the Viscosity Index of the stocks and is independent of crude sources and type of processing used to produce the oils.

Exceptions: Lubricating oil base stocks that have been historically classified as naphthenic or paraffinic by a refiner may continue to be so categorized irrespective of the Viscosity Index criterion.

Example:

(1) Unextracted paraffinic oils that would not meet the Viscosity Index test.

Middle Distillates. A general classification that includes distillate fuel oil and kerosene.

Miscellaneous Products. Includes all finished products not classified elsewhere (e.g., petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils).

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Motor Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that has been blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as given in ASTM Specification D439 or Federal Specification VV-G-1690B, includes a range in distillation temperatures from 122° to 158° F at the 10-percent recovery point and from 365° to 374° F at the 90-percent recovery point. The Reid Vapor Pressure ranges from 9 to 15 psi. "Motor gasoline" includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Finished Leaded Gasoline. Contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Finished Unleaded Gasoline. Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Gasohol. A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol), limited to 10 percent by volume of alcohol.

Motor Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished motor gasoline (e.g. straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogens, and alcohol.

Naphtha. A generic term applied to a petroleum fraction with an approximate boiling range between 122° and 400° F.

Naphtha Less Than 401° F. See Petrochemical Feedstocks.

Naphtha-Type Jet Fuel. A fuel in the heavy naphtha boiling range. ASTM Specification D1655 specifies for this fuel maximum distillation temperatures of 290° F at the 20-percent recovery point and 470° F at the 90-percent point, meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop

aircraft engines, primarily by the military. Excludes ramjet and petroleum rocket fuels.

Natural Gas. A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas Field Facility. A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, normal butane, pentanes plus, etc., and to control the quality of natural gas to be marketed.

Natural Gas Plant Liquids. Natural gas liquids recovered from natural gas in gas processing plants, and in some situations, from natural gas field facilities. Natural gas liquids extracted by fractionators are also included. These liquids are defined according to the published specifications of the Gas Processors Association and the American Society for Testing and Materials and are classified as follows: ethane, propane, normal butane, isobutane, pentanes plus, and other products from natural gas processing plants (i.e., products meeting the standards for finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

Natural Gas Processing Plant. A gas processing plant is a facility designed (1) to achieve the recovery of natural gas liquids from the stream of natural gas which may or may not have been processed through lease separators and field facilities, and (2) to control the quality of the natural gas to be marketed. Cycling plants are classified as gas processing plants.

Natural Gasoline and Isopentane. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes isopentane which is a saturated branch-chain hydrocarbon, (C₅H₁₂), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Net Receipts. The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

Normal Butane. See Butane.

OPEC. The acronym for the Organization of Petroleum Exporting Countries, that have organized for the purpose of negotiating with oil companies on matters of oil production, prices and future concession rights. Current

members are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. The Neutral Zone between Kuwait and Saudi Arabia is considered part of OPEC.

Operable Capacity. The amount of capacity that, at the beginning of the period, is in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day or barrels per stream day.

Operable Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operable refining capacity of the units.

Operating Capacity. The component of operable capacity that is in operation at the beginning of the period.

Other Hydrocarbons. Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite, oxygenates, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

Other Oils Equal To or Greater Than 401° F. See Petrochemical Feedstocks.

Oxygenates. Oxygenates include both alcohols and ethers used as octane boosting additives for gasoline (e.g., methyl tertiary butyl ether).

Pentanes Plus. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Includes isopentane, natural gasoline, and plant condensate.

Petrochemical Feedstocks. Chemical feedstocks derived from petroleum principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. The categories reported are "Naphtha Less Than 401° F" and "Other Oils Equal To or Greater Than 401° F."

Naphtha Less Than 401° F. A naphtha with a boiling range of less than 401° F that is intended for use as a petrochemical feedstock.

Other Oils Equal To or Greater Than 401° F. Oils with a boiling range equal to or greater than 401° F that are intended for use as a petrochemical feedstock.

Petroleum Administration for Defense (PAD) Districts. Geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Ad-

ministration for Defense in 1950. These districts were originally instituted for economic and geographic reasons as Petroleum Administration for War (PAW) Districts, which was established in 1942.

Petroleum Coke. A residue, the final product of the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5 barrels per short ton.

Marketable Coke. Those grades of coke produced in delayed or fluid cokers which may be recovered as relatively pure carbon. This "green" coke may be sold as is or further purified by calcining.

Catalyst Coke. In many catalytic operations (e.g., catalytic cracking) carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as a fuel in the refining process. This carbon or coke is not recoverable in a concentrated form.

Petroleum Products. Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Pipeline. Crude oil and product pipelines used to transport crude oil and petroleum products respectively, (including interstate, intrastate, and intracompany pipelines) within the 50 States and the District of Columbia.

Plant Condensate. One of the natural gas liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

Processing Gain. The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing Loss. The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a higher specific gravity than the crude oil processed.

Product Supplied, Crude Oil. Crude oil burned on leases and by pipelines as fuel.

Production Capacity. The amount of product that can be produced from processing facilities.

Products Supplied. Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus imports, plus unaccounted for crude oil, (plus net receipts when calculated on a PAD District basis), minus stock change, minus crude oil losses, minus refinery inputs, minus exports.

Propane (C₃H₈). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67° F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HiD-5 propane.

Propylene (C₃H₆). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes.

Refinery. An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Refinery Input, Crude Oil. Total crude oil (domestic plus foreign) input to crude oil distillation units and other refinery processing units (cokers, etc.).

Refinery Input, Total. The raw materials and intermediate materials processed at refineries to produce finished petroleum products. They include crude oil, products of natural gas processing plants, unfinished oils, other hydrocarbons and alcohol, motor gasoline and aviation gasoline blending components and finished petroleum products.

Refinery Production. Petroleum products produced at a refinery or blending plant. Published production of these products equals refinery production minus refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. Refinery production of unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input.

Refinery Yield. Refinery yield (expressed as a percentage) represents the percent of finished product produced from input of crude oil and net input of unfinished oils. It is calculated by dividing the sum of crude oil and net unfinished input into the individual net production of finished products. Before calculating the yield for finished motor gasoline, the input of natural gas liquids, other hydrocarbons and alcohol, and net input of motor gasoline blending components must be subtracted from the net production of finished motor gasoline. Before calculating the yield for finished aviation gasoline, input of aviation gasoline blending components must be subtracted from the net production of finished aviation gasoline.

Residual Fuel Oil. The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations and that conform to ASTM Specifications D396 and 975. Included are No. 5, a residual fuel oil of medium viscosity; Navy Special, for use in steam-powered vessels in government service and in shore power plants; No. 6, which includes Bunker C fuel oil, and is used for commercial and industrial heating, electricity generation and to power ships. Imports of residual fuel oil include imported crude oil burned as fuel.

Residuum. Residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1000° F.

Road Oil. Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Shell Storage Capacity. The design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

Special Naphthas. All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Steam (Purchased). Steam, purchased for use by a refinery, that was not generated from within the refinery complex.

Still Gas (Refinery Gas). Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene,

propane, propylene, etc. Still gas is used as a refinery fuel and a petrochemical feedstock. The conversion factor is 6.000 million BTU's per fuel oil equivalent barrel.

Stock Change. The difference between stocks at the beginning of the month and stocks at the end of the month. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

Strategic Petroleum Reserve (SPR). Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Sulfur. A nonmetallic element of lemon-yellow color, sometimes known as "brimstone".

Supply. The components of petroleum supply are field production, refinery production, imports, and net receipts when calculated on a PAD District basis.

Tank Farm. An installation used by gathering and trunk pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

Tanker and Barge. Vessels that transport crude oil or petroleum products. In this publication, data are reported for movements between PAD Districts; from a PAD District to the Panama Canal; or from the Panama Canal to a PAD District.

Thermal Cracking. A refining process in which heat and pressure are used to break down, rearrange, or combine hydrocarbon molecules. Thermal cracking includes gas oil, visbreaking, fluid coking, delayed coking, and other thermal cracking processes (e.g., flexicoking). See individual categories for definition.

Toluene (C₆H₅CH₃). One of the aromatic compounds, commonly referred to as BTXs, similar to benzene but less volatile. It is primarily manufactured through catalytic reforming processes, steel mill coking production and olefin plant operations. It is used as a motor gasoline high-octane blending compound, as a solvent and in organic synthesis.

Unaccounted for Crude Oil. Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unfinished Oils. Includes all oils requiring further processing, except those requiring only mechanical blending. Includes naphthas and lighter oils, kerosene and light

gas oils, heavy gas oils, and residuum. See individual categories for definition.

Unfractionated Streams. Mixtures of unsegregated natural gas liquid components excluding those in plant condensate. This product is extracted from natural gas.

United States. The United States is defined as the 50 States and the District of Columbia.

Vacuum Distillation. Distillation under reduced pressure (less the atmospheric) which lowers the boiling temperature of the liquid being distilled. This technique with its relatively low temperatures prevents cracking or decomposition of the charge stock.

Visbreaking. A thermal cracking process in which heavy atmospheric or vacuum-still bottoms are cracked at moderate temperatures to increase production of distillate products and reduce viscosity of the distillation residues.

Wax. A solid or semi-solid material derived from petroleum distillates or residues by such treatments as chilling, precipitating with a solvent, or de-oiling. It is light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. The three grades included are microcrystalline, crystalline-fully refined, and crystalline-other. The conversion factor is 280 pounds per 42 U.S. gallons per barrel.

Microcrystalline Wax. Wax extracted from certain petroleum residues having a finer and less apparent crystalline structure than paraffin wax and having the following physical characteristics: Penetration at 77° F (D1321)-60 maximum. Viscosity at 210° F in Saybolt Universal Seconds (SUS). (D88)-60 SUS (10.22 centistokes) minimum to 150 SUS (31.8 centistokes) maximum. Oil content (D721)-5 percent minimum.

Crystalline-Fully Refined Wax. A light-colored paraffin wax having the following characteristics: Viscosity at 210° F (D88)-59.9 SUS (10.18 centistokes) maximum. Oil content (D721)-0.5 percent maximum. Other +20 color, Saybolt minimum.

Crystalline-Other Wax. A paraffin wax having the following characteristics: Viscosity at 210° F (D88)-59.9 SUS (10.18 centistokes) maximum. Oil content (D721)-0.51 percent minimum to 15 percent maximum.

Working Storage Capacity. The difference in volume between the maximum safe fill capacity and the quantity below which pump suction is ineffective (bottoms).

Xylene ($C_6H_4(CH_3)_2$) One of the aromatic compounds commonly referred to as BTXs. It is primarily manufactured through catalytic reforming processes, steel mill

coking production and olefin plant operations. It is used as a motor gasoline high-octane blending component, as a solvent and in organic synthesis.

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